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BLUE JAY

Volume 58 Number 1 March 2000



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Covers: Front: Long-tailed Weasel. Photo by Gary Wobesor.
Back: Prairie Crocuses. Photo by GeorgeTosh.

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58th ANNUAL SASKATCHEWAN CHRISTMAS BIRD COUNT - 1999

Compiled by Wayne C. Harris, Saskatchewan Environment and Resource Management, 350 Cheadle Street West, Swift Current, SK S9H 4G3

Christmas bird counts were conducted in 99 locations during the 1999 count period (December 16 - January 3). This is two more counts than last year but four less than the record 103 received in 1997.

Mild temperatures and little snow cover were the norm throughout the count period. The overall average minimum temperature was only -10°C and averaged 4°C for the high. Temperatures reached 9°C between Christmas and New Year's Day. The coldest temperature (-34°C) was reported at Missinipe on January 2, 2000. Snow cover averaged only 5 cm with many southern locations reporting no snow. Winds were a factor this year with average maximum winds at 23 km/hr making hearing birds difficult. Armit reported the highest wind speeds at 80 km/hr although many counts had wind in excess of 30 km/hr (Table 1).

The number of people participating in counts was 766. They covered over 600 km on foot in 350 hours, travelled over 13,000 km by vehicle in 650 hours, all well above average (Table 2).

The birds

One hundred and twelve species were reported this year and all but four of these were on count day. In addition to these there were two recognizable subspecies and one hybrid seen (Tables 3, 4 and 5). This is the second highest species total ever reported and is only the fourth time 100 or more species have been reported.

The highest number of species seen on a count was 42 at Coronach although Saskatoon, with 40 count day species, plus four count period species, was the highest overall. Another 10 counts exceeded 30 species, making this one of the best years ever for species diversity on individual counts.

The number of individual birds seen exceeded 145,000, the second highest total ever. Mallard was the most abundant bird and with 24 localities reporting the species, provided further evidence of the mild weather during the fall and early winter. Not surprisingly, Snow Bunting was the second most abundant, although this total was bolstered by a couple of large counts, making the total deceiving. In general, Snow Buntings were scarce and only ranked 9th on the frequency list instead of the usual first or second. Third on the list of abundance was the Common Redpoll with over 19,000 individuals reported, but even more surprising was the fact that they were recorded on 95% of the counts, making them the most frequently occurring species on counts, out-ranking both Black-billed Magpie and House Sparrow.

New Species

Four new species were reported this year bringing the provincial Christmas bird count total to 172 species. The first was a Ferruginous Hawk on the Leader South count. This species normally goes south to Texas for the winter, but this year, with the warm weather, ground squirrels remained active and a few Ferruginous Hawks remained here later than normal.

The second new species was Eurasian Collared-Dove. A pair of this species was found in each of Regina and Weyburn. In each case, the pair of birds had arrived earlier in the year and had taken up residence at a feeder. The Eurasian Collared-Dove arrived in North America in the early 1970s with an introduction to the Bahamas, spreading from there to the Florida Keys and then north to Florida. Populations have established in Florida, Alabama and Texas. From these established populations, pairs of juvenile birds are apparently under-taking long distance northern movements to such areas as Wisconsin, Michigan, Minnesota, Montana and now Saskatchewan. It will be interesting to see if they successfully overwinter and breed here.

The next new species is appropriately named but still well out of its normal winter range - a Winter Wren. This bird was found foraging in a brushy area along Battle Creek in the Cypress Hills and is Saskatchewan's first winter record.

Last is a Brambling which arrived at Hazel and Myron Barton's feeder at Macdowall on December 31 and stayed for three days before moving on. This bird was associating with a group of redpolls. This is an Asian species which shows up occasionally as a straggler along the Pacific coast mostly in Alaska although there are records for both Manitoba and Montana. This is the second Saskatchewan record, the first being from Saskatoon in 1991.

Other rarities

Table 4 lists the least frequent species on the counts and the rarest species are all in this table. The second count and first count day record of a Field Sparrow was one at a Birch Hills feeder; the only other count record was a count period bird from Saskatoon in 1985. A Harlan's Hawk on the Fort Walsh count was only the third record; the first was at White Bear in 1995 and the second at Govenlock in 1997.

Population trends

A number of new high counts were recorded (Table 6). Most notable, and following the trend discussed last year was the 247 House Finches at Saskatoon which exceeded the 190 in Regina last year. The 10 American Goldfinches at Craven was one more than last year's record 9 at Kenosee Lake.

Waterfowl numbers were well above the normal with both Canada Geese and Mallard showing large increases (Table 7). Northern Goshawk numbers were down as were Merlin. Although Ruffed Grouse numbers were down from last year they were above the long term average. Spruce Grouse showed a large increase over last year and were well above the long term average.

Several irruptive species appeared in above normal numbers. Red-breasted Nuthatches were well above normal but it was the redpolls that put on the best show. Numbers of both Common and Hoary Redpolls were two to three times the normal. Yet other species often associated with these winter irruptions were conspicuously uncommon, in particular Pine Grosbeaks and both crossbill species.

Count areas and Participants
(*Names of compilers are in italics*).

1.ARCHERWILL. Fay Black, *Ken Folstad*, Carmel Fountain, Judy Revoy, Doris Slind.

2.ARMIT. Valeri Harris, *Wayne Harris*, Sheila Lamont, Bill Zak, Joyce Zak.

3.ASSINIBOIA. Ed Bearss, Jack Burgeson, *Cecil Hayward*, David Landa, Delmer Pettem, Wilf Prentice, Ken Schuweiler.

4.AVONLEA - SPRING VALLEY. *Larry Bogdan.*

5.BANGOR. Allan Bolton, Lynn Bolton, Judith Davis, Aileen Hayward, *Jean Hilton*, Minnie Hughes, Bradley Thompson, Norman Thompson.

6.BEAUVAL.Clara Sanderson, *Rick Sanderson.*

7.BIGGAR. Dale Booth, *Guy Wapple*, Marguerite Wapple, Robert Wapple, Sandra Wapple.

8.BIG RIVER. Colleen Honig, *Glenn Honig.*

9.BIRCH HILLS. Carman Dodge, Margaret Mareschal, *Moe Mareschal*, Don Weidl.

10.BODMIN. *Carla Braidek.*

11.BROADVIEW. David Chasckavich, *Don Weidl,* Tony Weidl.

12.BROMHEAD. Martin Bailey, *Carol Bjorklund.*

13.CABRI. *Carman Dodge.*

14.CANDLE LAKE. *Carman Dodge*, Dave Stepnisky, Lisa Takats, Don Weidl.

15.CLARK'S CROSSING. Lucille Bradatsch, Donna Bruce, Melanie Elliott, Witek Gierulski, Marilyn Haskins, Jim Hay, Robert Johanson, Marlene Kalanack, Richard Kerbes, Gordon Koshinsky, Margaret Koshinsky, Gerard Lahey, Janet McVittie, Hilda Noton, Lynn Oliphant, Keith Pahl, Betty Penner, Stan Shadick, Rhonda Shewfelt, Wayne Sheils, Eli-Ann Stoffel, Martin Stoffel, Kirk Wallace, *Michael Williams*, Jim Wood.

16.COCHIN. *Daryl Johannesen,* Kaitlin Johannesen, Kristine Johannesen.

17.CORONACH. *Wayne Harris.*

18.CRAVEN. Mary Aird, Margaret Belcher, Betty Binnie, David Cowley, Jim Cummings, Karen Elliott, *Trevor Herriot*, Louise Holloway, Phil Holloway, Bob Kreba, Kevin Moore, Ron Myers, Bill Ogilvie.

19.CROOKED LAKE. Bill Livesay, Mayta Livesay, Boyd Metzler, John Pollock, *Dorothy Skene*, Ed Skene.

20.CROOKED RIVER. *Margaret Mehler*, Morley Mehler.

21.CYPRESS HILLS PROVINCIAL PARK (Centre Block). Gary Churchill, John Douglas, Shirley Helmerson, Marilyn Scheller, Wayne Harris, Joan Hodgins, Jeff Jensen, Ron Jensen, Harvey Johnson, Cameron Lockerbie, *Melody Nagel-Hisey.*

22.DUCK LAKE. Keith Hobson, *Alan Smith.*

23.EASTEND. Evelyn Brown, Betty Davis, Robert Gebhardt, *Joan Hodgins*, Harvey Johnson.

24.EMMA LAKE. Glen Hanson, Jean Hanson, *Deanna Krug*, Norman Krug.

25.ESTEVAN. Marlis Buck, *Wayne Harris*, Sheila Lamont.

26.ESTUARY NORTH. Barry Cocks, Cathy Cocks, Chris Francis, *Dean Francis*, Frances Hartsook.

27.FENTON. *Carman Dodge*, Don Weidl.

28.FERLAND. Don Davidson, Jacqueline Davidson, Martha Davidson, Steven Gauthier, *Cameron Jackson*.

29.FIFE LAKE. *Martin Myers*, Robert Rafuse.

30.FORT QU'APPELLE. James Armstrong, Phyllis Bordass, Anne Davies, Ida Grosse, Doreen Harman, *Ronald Hooper*, Alice Isfan, Keith James, Lois Lamontagne, Vic Lamontagne, Allan Lewis, John Lowe, Don McDougall, Jean McKenna, Allan Mlazgar, Delores Palmer, Webb Palmer, Paul Paquin, Lorne Rowell, Fred Warren.

31.FORT WALSH. Pat Bulman, Valeri Harris, Wayne Harris, Al Hartley, Ron Jensen, Sheila Lamont, Wilkes Parsonage, Wayne Renaud, *Guy Wapple*.

32.GARDINER DAM. Pat Bulman, Greg Fenty, Valeri Harris, Wayne Harris, Al Hartley, Mary Houston, Stuart Houston, Sheila Lamont, Cameron Lockerbie, Dennis Pederson, Wayne Renaud, Martin Stoffel, *Guy Wapple*, Dan Zazelenchuk.

33.GOOD SPIRIT LAKE. *Bill Anaka*, Joyce Anaka, Dorothy Riesz, Ray Riesz, Julia Wiwchar.

34.GOVENLOCK. Pat Bulman, Valeri Harris, *Wayne Harris*, Sheila Lamont, Wayne Renaud, Guy Wapple.

35. GRASSLANDS NATIONAL PARK (NW). Roy Cote, Pat Fargey, Laura James, Dennis Madsen, Lorie Wiesner, Collette Schmidt, *Adrian Sturch*.

36.GRAYSON. *Charles Helm*, Daniel Helm, Karl Zimmer.

37.HARRIS. *Guy Wapple,* Robert Wapple.

38.HEPBURN. Helen Fehr, *Phyllis Siemens*.

39.HOLBIEN. Chlorus Harris, *Helen Harris*.

40.INDIAN HEAD. Jan Beattie, Carol Beaulieu, Denise Beaulieu, Margot Beaulieu, Rhys Bealieu, Vic Beaulieu, Chris Blair, Irv Escott, M. Escott, S. Escott, *David Gehl*, Mavis Gray, Gordon Howe, Dora Nichols, Brian Scott, Lorne Scott, Heidi Scott, Ann Willerth, Gordon Willerth.

41.KAMSACK. John Barisoff, George Bernhard, Agnes Betz, Marlon Brock, Mable Buceuk, Fred Chernoff, Jeff Conley, Lindee Dewores, Judy Dubasov, Bill Koroluk, Adeline Nykolaishen, Molly Poole, Kelsey and Ryley Rezansoff, *Isabel Ritchie*, Metro Rosowsky, Wally Sasyniuk, Elsie Severson, Don Smandych, Arlene Smorodin, Elenor Sookocheef, Pete Uhlow.

42.KELVINGTON. *Dianne Sloan*, Marguerite Sloan.

43.KENASTON. *Lawrence Beckie*.

44.KENNEDY. *Glen Heebner,* Boyd Metzler

45.KENOSEE LAKE. Boyd Metzler, *John Pollock*.

46.KILWINNING. *Ed Driver*, Al Smith

47.KINDERSLEY. *Jean Harris*, Keith Harris.

48.KINLOCH. *Don Forbes*, Doreen Forbes, Merle Jackson, Cliff Logan, Wilf Rodenberg, Doreen Wickstrom.

49.KUTAWAGAN LAKE. *Wayne Harris,* Sheila Lamont, Allan Rahn.

50.LAIRD. *Alice Nickel,* Arley Nickel

51.LAST MOUNTAIN LAKE N.W.A. Leland Greenfield, Valeri Harris, *Wayne Harris*, Sheila Lamont.

52.LEADER (North). *Daisy Meyers.*

53.LEADER (South). *Brenda Flood*, John Flood.

54.LIVELONG. *Sarah Pavka.*

55.LOVE - TORCH RIVER. Ken Blaine, Lorna Blaine, *Bert Dalziel*, Duke Dalziel, Joan Dalziel, Kari Dalziel, Nora Dalziel, Sara Dalziel, Betty Donovan, Bruce Donovan, Eileen L'Heureux, Paul L'Heureux, Lynn Matthews, William Matthews.

56.LUSELAND. Doug Campbell, Estelle Finley, *Kim Finley*, Sandra Finley, Jean Halliday, Brent Honeker.

57.MACDOWALL. Hazel Barton, *Myron Barton.*

58.MATADOR. Cindy Romo, *Jim Romo.*

59.MEADOW LAKE. Bill Caldwell, Betty Ann Golly, Byron Golly, Stuart Golly, Tyler Golly, Alexes Lockwood, Pat Sampson, Brenda Twidale, Ian Twidale, Lorraine Twidale, Joe Twidale, John Weir, *Bob Wilson.*

60.MELFORT. *Frieda Markland.*

61.MELVILLE. Donna Alberts, *Marion MacLean*, Mark Shepherd, Ross Wotherspoon.

62.MISSINIPE. *Shirley Glass.*

63.MOOSE JAW. Elsie Adkins, Jack Adkins, Doug Brunsdon, Helen Brunsdon, Barry Dowse, Fern Dowse, Al Gurnsey, Terry Gurnsey, Trevor Gurnsey, Kerry Hanley, Robert Hanley, Carol Howes, Ralph Howes, Eve King, Cy Knight, *Leith Knight*, Allan Lemieux, Shirley Lemieux, Bill McDonald, Jean Anne Mowchenko, Len Mowchenko, Helen Norys, Peter Norys, Wilma Pickering, Ramsay Ross, Gus Sagall, Mike Sagall, Lloyd Stewart, Brenda Winch.

64.MOOSE MOUNTAIN. *Greg Bobbitt*, Dick Gutfriend, Keith Sakatch, Stewart Stairmand.

65.NIPAWIN. Inge Brown, Vi Budd, *Joyce Christiansen*, Bert Dalziel, Bruce Donovan, Bryan Friswell, Judith Friswell, Betty Hodgins, Hildegard Lessing, Doug Pegg, Helen Pegg, Shirley Phillips.

66.NISBET FOREST WEST (NW of Crutwell). *Kim Clark*, Kiri Clark, Shamara Clark, Suzanne Clark, Evelyn Marshall.

67.PIKE LAKE. Tony Allen, Lawrence Beckie, Kurt Brauner, Donna Bruce, Ann Christiansen, Pat Christiansen, David Cook, Louise Cook, Jill Cornford, Peter Cornford, Bob Girvan, Bernie Gollop, Mike Gollop, Don Johnston, Shirley Johnston, Elaine Konkin, Fred Konkin, Kay Krueger, Donna Nazar, Meno Nickel, Bruce Noton, Hilda Noton, Keith Pahl, *Frank Roy*, Stan Shadick, Jan Solem, Angela Stern, Martin Stoffel, Michael Williams, Michael Willson, Phil Willson.

68.PORCUPINE PLAIN. Agnes Hodge, *Keith Larwood*, Pat Larwood, Phyllis Swaan.

69.PREECEVILLE. Mary Mitchell, *Muriel Mitchell*, Mae Tunbridge.

70.PADDOCKWOOD. Barry Day, Alfred Corriveau, *John Dinius,* Serg McGowan, John Toporowski

71.PRINCE ALBERT. John Burt, Pamela Burt, Jackie Carter, Steve Carter, *Carman Dodge*, Keith Dodge, Ken Dodge, Robert Fahlman, Joan Firth, Millie Hjertaas, Sandra Jewel, David Junor, Murray Little, Penny Mindiuk, Joan Pereverzoff, Helen Placsko, Joe Placsko, Fanny Prins, Christine Rye, Deborah Rye, John Rye, Michael Rye, Peter Rye, Les Senner, Winona Senner, Katherine Sutton, Shirley Swain, Ollie Thoresen, Nancy Vizina, Don Weidl.

72.PRINCE ALBERT NATIONAL PARK. Susan Carr, Richard Cherepak, Yolande Cherepak, *Dan Frandsen*, Brad Lloyd, Paula Pacholek, Cam Zimmer.

73.QU'APPELLE VALLEY DAM. Witek Gierulski, Stan Shadick, *Michael Williams.*

74.RAYMORE. Valeri Harris, *Wayne Harris*, Sheila Lamont.

75.REGINA. Ross Barclay, Gladys Barr, Keith Barr, Lionel Bonneville, Stephane Bonneville, Jim Elliott, Shirley Gerlock, Isabelle Girard, Trevor Herriot, *Dale Hjertaas*, Estelle Hjertaas, Kerry Hjertaas, Paule Hjertaas, Phyllis Ilsley, Winnifred Ilsley, Bob Kreba, Linda Langenbacher, Rheal Laroche, Yvonne McKenzie, Ron Meyers, Catrina Ottosin, Charles Ottosin, Diane Ottosin, Jean Ottosin, Catherine Parkinson, Wayne Pepper, Brian Rainey, Curt Schroeder, Diane Secoy, Frank Switzer, May Switzer, Audrey Tranquair, Ian Tranquair.

76.ROCKGLEN - BORDERLAND. *Bob Rafuse*, Martin Meyers.

77.ROUND LAKE (Qu'Appelle Valley). Pat Connolley, *Doug Francis*, Boyd Metzler, John Pollock.

78.SASKATCHEWAN LANDING PROVINCIAL PARK. Calvin Fiala, *Wayne Harris*, Ron Jensen, Cameron Jordheim, Sig Jordheim, Cameron Lockerbie.

79.SASKATCHEWAN RIVER FORKS. Carman Dodge, *Don Weidl.*

80.SASKATOON. Bruce Acton, Don Adams, Darlene Aikman, Nancy Allan, Tony Allen, Juhachi Asai, Sumiko Asai, Don Beazely, Margaret Belcher, Bob Besant, Jeff Besant, Joyce Besant, Bruce Brotzel,Doris Bietenholz, Eveline Boudreau, Gail Bunt, Rick Bunt, David Cook, Louise Cook, Paul Coutu, Vi Coutu, Ann Coxworth, Ewen Coxworth, Leah Currie, Eileen Dalglish, Ed Driver, Lorne Duczek, Brian Duggan, Ann Dzus, Randi Edmonds, Fran Eldridge, Melanie Elliott, Helen Fast, Ken Froese, Mary Gilliland, Cedric Gillott, Bernie Gollop, Maddie Gollop, Mike Gollop, Jean Gordon, Bob Green, Jerry Haigh, Bruce Hanbidge, Helen Hanbidge, John Hanbidge, Kaija Harris, Tim Haughian, Jim Hay, John Horton, Mary Houston, Stan Houston, Stuart Houston, Kathryn Hull, Don Johnston, Marlene Kalanack, Richard Kerbes, Kay Klassen, Elain Konkin, Fred Konkin, Gordon Koshinsky, Barbara Kozmyk, Gerard Lahey, Harvey Lane, Catherine Laratte, Erling Larsen, Grethe Larsen, Anna Leighton, Ted Leighton, Cameron Lockerbie, Bill MacKenzie, Catherine Madore, Edna McCawley, Terry McCawley, Cleve Mellor, Cathryn Miller, David Miller, Muriel Miller, Garth Nelson, Lillian Nelson, Menno Nickel, Bruce Noton, Hilda Noton, Randy Olson, Keith Pahl, Amanda Plante, Garry Rector,

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81.SHAMROCK. Donna Heinrichs, Jaimee Heinrichs, Sharon Heinrichs, *Hugh Henry.*

82.SKULL CREEK. Catherin Bennetto, Eileen Bennetto, *Ray Bennetto*, Tim Bennetto, Bob Nyen, Derek Nyen, Vivian Nyen.

83.SNOWDEN. Bonny Bailey, Elenor Bodnaruk, Mike Bodnaruk, Bert Dalziel, Kari Dalziel, Sara Dalziel, Diane Friesen, Don Friesen, *Irene Hagel*, Karen Hagel, Ben Holmquist, Lily Kuzniar, Bob Olson, Janet Olson, Jack Pickett, Ole Rudd, Vera Schemenauer, Orville Shwetz, Vicky Shwetz, Bev Smears, Walter Stevenson, Bernice Tornquist, Torance Torquist.

84.SOMME. Edwin Billeter, Sharon Birch, Wesley Black, Irene Brehmer, Florence Chase, Margaret Hooper, Ronald Hooper, Gordon Johnson, Elsie Kerr.

85.SPALDING. Olwen Hoffman, Dora Knutson, Virginia Perron, Bill Spizawka, *Velma Spizawka.*

86.SQUAW RAPIDS. Pat Bulman, Valeri Harris, *Wayne Harris*, Sheila Lamont, Guy Wapple.

87.STOCKHOLM. Douglas Flatt, *Gordon Smith.*

88.SWIFT CURRENT. Barbara Adam, Evelyn Anderson, James Beattie, Jackie Bolton, Merl Campion, Tracy Chanig, Noris Currie, Laurent Dudragne, Mary Ann Dudragne, Michelle Dudragne, Hugh Henry, Jeff Jensen, *Ron Jensen*, Doreen Kreuger, Walt Kreuger, Arlene Lawson, Doug Lawson, Cameron Lockerbie, Kimberly Marsden, Eloise Miller, Max Miller, Francis Moen, Ed Nein, Ted Philipchuk, Ernest Schlickting, Jeanne Schlickting, Irene Stinson, Doris Thoreson, Doris M. Thoreson, Betty Welgan, Ron Welgan, John Weston, Pearl Weston, Verdella Zacharias.

89.TISDALE. Carl Mohr, *Joyce Mohr*, Percy Yelland.

90.TOGO. Barb Elsasser, *Doug Elsasser.*

91.TORCH RIVER VALLEY. *Bert Dalziel*, Bruce Donovan, George Lidster, Jean Lidster, Dale Nelson, Jeanette Nelson, Curtis Riemer.

92.TURTLE LAKE. *E.M. Robinson*, Marie Robinson.

93.WALDHEIM. Bailey Epp, Barb Epp, Murray Epp, Lorena Janzen, Wimpy Janzen.

94.WATSON.Doreen MacDonald, Irene Sampson, *Patricia Sterzuk,* Doreen Weber.

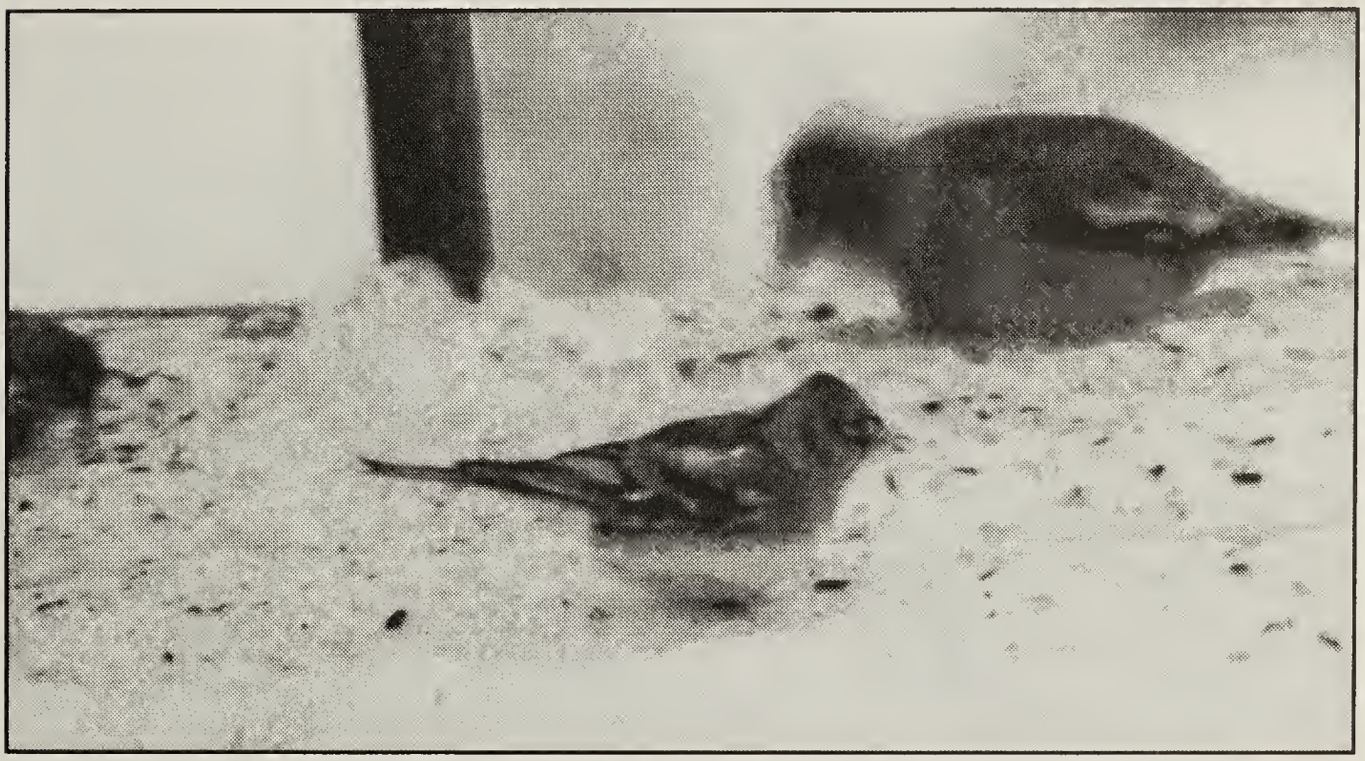
95.WELDON. *Ada Hawrish*, Bernard Hawrish.

96.WEYBURN. Leo Belanger, Jim Burge, Bob Cameron, Lucille Cameron, Fred Garner, Lynne Garner, George Gillies, Doug Goranson, Mavis Goranson, *Dick Gutfriend*, Betty Layh, Phil Layh, Cyril Marcotte, Alma McCormick, Keith Sakatch, Stewart Stairmand, Joe Weisgerber, Rose Weisgerber.

97.WHITE BEAR. Darryl Jordheim, Floyd Jordheim, Laine Jordheim, *Sig Jordheim*, Elijah MacCulloch, Greg MacCullock, Lynette MacCullock.

98.WHITEWOOD. Ellen Blyth, Stephen Ede, Tom Ede, Wilfred Jordens, Bernice Juzyniec, Felix Juzyniec, Joyce Kydd, Jean Meadows, *Boyd Metzler*, John Pollock, Alfred Pritchard, Florence Pritchard, Lenore Santo, Diane Veresh, Pat Ward, Jean Wilson, Edwin Wyatt, Elaine Wyatt.

99.YORKTON. Bill Anaka, Joyce Anaka, Elinor Hjertaas, Lance Irving, *Mark Kornder*, Boyd Metzlar, Ray Riesz, Geoff Rushowick, Patrick Rushowick, Tesa Rushowick, Dorothy Skene, Harold Wilkinson, Wilma Wilkinson.



Brambling at Macdowall ***Myron Barton***



Field Sparrow at feeder - Birch Hills ***Don Weidl***

Figure 1. Location of 1999 counts (numbers correspond to locality names in Tables)

Table 1- 1: COUNT WEATHER CONDITIONS

COUNT	DATE	MINIMUM TEMPERATURE °C	MAXIMUM TEMPERATURE °C	MINIMUM WIND (kmph)	MAXIMUM WIND (kmph)	MINIMUM SNOW (cm)	MAXIMUM SNOW (cm)	SKY AM	SKY PM
1 ARCHERWILL	Dec. 30	-28	-24	5	15	1	2	light snow	light snow
2 ARMIT	Dec. 27	-11	2	30	80	5	20	partly	partly
3 ASSINIBOIA	Jan. 03	0	2	25	35	5	8	partly	partly
4 AVONLEA	Jan. 02	-19	-18	0	5	7	10		light fog
5 BANGOR	Dec. 17	-15	-3	5	10	3	10	partly	overcast
6 BEAUVAL	Dec. 26	-6	-1	0	10		40	partly	mostly clear
7 BIGGAR	Dec. 27	-2	6	20	60	0	10	partly	partly
8 BIG RIVER	Jan. 02	-22	-22	0	0	30	40		
9 BIRCH HILLS	Dec. 20	-26	-15	5	20	2	40	clear	overcast
10 BODMIN	Dec. 24	0	4	0	0	4	10	clear	
11 BROADVIEW	Dec. 26	-3	2	15	30	0	2	overcast	partly
12 BROMHEAD	Jan. 02	-8	-6	10	15	0	1	overcast	overcast
13 CABRI	Dec. 25	-5	9	5	10	0	2	partly	mostly clear
14 CANDLE LAKE	Dec. 30	-7	-4	20	25	10	15		
15 CLARK'S CROSS.	Dec. 18	-9	-3	15	35	2	10	overcast	overcast
16 COCHIN	Dec. 27	2	6	0	5	10	25	partly	partly
17 CORONACH	Dec. 22	-8	0	10	50	0	8	light fog	light fog
18 CRAVEN	Dec. 18	-4	-2	20	30	0	8	mostly clear	partly
19 CROOKED LAKE	Dec. 18	-8	-1	5	30	3	5	overcast	overcast
20 CROOKED RIVER	Dec. 30	-20	-20	10	20			light fog	light fog
21 CYPRESS HILLS	Dec. 30	-2	1	0	10	0	15	clear	mostly clear
22 DUCK LAKE	Dec. 19	-20	-15	10	20	10	30	clear	clear
23 EASTEND	Dec. 27	-1	8	0	35	0	0	clear	clear
24 EMMA LAKE	Jan. 01	-18	-16	5	15	30	45	mod. snow	mod. snow
25 ESTEVAN	Dec. 23	-7	2	10	40	0	5	mostly clear	mostly clear
26 ESTUARY	Dec. 31	-7	-3	0	5	0	3	partly	partly
27 FENTON	Dec. 18	-9	-9	20	28	2	5	overcast	light snow
28 FERLAND	Dec. 30	1	8	0	15	0	0	mostly clear	clear
29 FIFE LAKE	Dec. 28	4	7	5	25	0	0	clear	clear
30 FT. QU'APPELLE	Dec. 18	-6	-4	20	22	3	4	overcast	overcast
31 FORT WALSH	Dec. 18	-3	4	10	70	0	5	light rain	light snow
32 GARDINER DAM	Dec. 20	-31	-18	10	30	0	5	partly	partly
33 GOOD SPIRIT	Dec. 29	-3	5	15	25	0	5	partly	partly
34 GOVENLOCK	Dec. 19	-17	-15	30	70	0	0	mostly clear	partly
35 GRASSLANDS NP	Dec. 17	-10	4	4	22	0	1	clear	clear
36 GRAYSON	Dec. 23	-5	1	0	10	0	10	mostly clear	mostly clear
37 HARRIS	Jan. 03	-28	-21	0	20	0	8	partly	partly
38 HEPBURN	Dec. 29	2	5	0	0	4	8	clear	mostly clear
39 HOLBEIN	Dec. 31	-20	-15	25	30	10	15	clear	partly
40 INDIAN HEAD	Dec. 27	-10	6	0	40	0	5		clear
41 KAMSACK	Dec. 26			10	20	10	15	clear	
42 KELVINGTON	Dec. 28	-1	3	5	10	8	10	clear	clear
43 KENASTON	Dec. 23	-9	0	0	10	5	10	clear	clear
44 KENNEDY	Dec. 30	-5	-2	20	50	0	3	partly	clear
45 KENOSEE LAKE	Dec. 28	2	6	10	40	0	2	mostly clear	partly
46 KILWINNING	Dec. 22	-13	-2	0	0	10	20	mostly clear	mostly clear
47 KINDERSLEY	Dec. 27	0	4	10	15	0	3	clear	clear
48 KINLOCH	Dec. 18	-10	-4	10	20	5	8	overcast	overcast
49 KUTAWAGAN L.	Dec. 24	-5	3	10	30	2	10	clear	clear
50 LAIRD	Dec. 28					10	20	partly	clear

Table 1- 2: COUNT WEATHER CONDITIONS

COUNT	DATE	MINIMUM TEMPERATURE °C	MAXIMUM TEMPERATURE °C	MINIMUM WIND (kmph)	MAXIMUM WIND (kmph)	MINIMUM SNOW (cm)	MAXIMUM SNOW (cm)	SKY AM	SKY PM
51 LAST MT. LAKE	Dec. 26	-9	4	30	50	2	6	partly	partly
52 LEADER (N)	Dec. 27	-4	9	0	30	0	1	clear	clear
53 LEADER (S)	Dec. 18	0	5	5	10	0	0	overcast	overcast
54 LIVELONG	Dec. 21	-20	-15			2	4	mostly clear	mostly clear
55 LOVE	Dec. 24	-2	-2	10	25	20	28	clear	clear
56 LUSELAND	Dec. 26	2	6	0	10	0	5	mostly clear	mostly clear
57 MACDOWALL	Dec. 25	-3	4	30	40	10	15	clear	clear
58 MATADOR	Dec. 27	0	9	5	35	6	12	mostly clear	clear
59 MEADOW LAKE	Dec. 26	0	3	0	10	0	20	clear	clear
60 MELFORT	Dec. 26								
61 MELVILLE	Dec. 25	-8	3	25	50	0	10	mostly clear	overcast
62 MISSINIPE	Jan. 02	-34	-30	0	0	50	50	mostly clear	mostly clear
63 MOOSE JAW	Dec. 26	-7	5	15	30	0	0	mostly clear	mostly clear
64 MOOSE MTN.	Dec. 30	-4	-1	5	35	0	3	overcast	mostly clear
65 NIPAWIN	Dec. 30	-13	-13	5	10	6	25	light snow	light snow
66 NISBET FOREST	Jan. 01	-22	-15	5	10	20	30	light snow	light snow
67 PIKE LAKE	Jan. 02	-24	-20	5	15	5	15	light snow	light snow
68 PORCUPINE PLN.	Dec. 27	-10	1	10	15	10	15	clear	clear
69 PREECEVILLE	Jan. 01	-21	-21	15	20	10	15	light snow	light snow
70 PADDOCKWOOD	Dec. 26								
71 PRINCE ALBERT	Dec. 19	-25	-20	20	40	10	70	clear	clear
72 PR. ALBERT NP	Dec. 19	-15	-10	10	15				
73 QU'APPELLE DM	Dec. 19	-25	-20	30	60	0	6	mostly clear	mostly clear
74 RAYMORE	Dec. 25	0	4	30	50	5	15	mostly clear	clear
75 REGINA	Dec. 26	-1	3	10	25	0	0	mostly clear	mostly clear
76 ROCKGLEN	Dec. 30	-3	-1	0	0	0	0	clear	clear
77 ROUND LAKE	Dec. 20	-28	-20	10	20	0	5	clear	clear
78 SK. LANDING PP	Dec. 21	-12	-5	5	15	0	15	mostly clear	partly
79 SASK. R. FORKS	Dec. 20	-19	-18	0	10	5	15	overcast	overcast
80 SASKATOON	Dec. 26	-5	4	10	30	3	15	partly	partly
81 SHAMROCK	Dec. 29	3	6	5	15	0	15	mostly clear	mostly clear
82 SKULL CREEK	Dec. 26	-5	0	5	20	0	1	partly	partly
83 SNOWDEN	Dec. 27	2	8	0	0	2	6	overcast	mostly clear
84 SOMME	Dec. 27	-2	6	30	60	7	10	clear	clear
85 SPALDING	Dec. 27	-10	7	30	50	6	10	overcast	clear
86 SQUAW RAPIDS	Dec. 28	0	5	5	10	20	40	partly	overcast
87 STOCKHOLM	Dec. 28	-8	7			0	2	partly	partly
88 SWIFT CURRENT	Jan. 02	-18	-12	5	9	2	10	light snow	mod. snow
89 TISDALE	Dec. 24	-6	-2			10	12	partly	overcast
90 TOGO	Dec. 24	-15	-8	40	50	2	5	partly	partly
91 TORCH RIVER	Jan. 02	-33	-25	0	15	30	40		
92 TURTLE LAKE	Dec. 20	-15	-10	5	10	12	12	overcast	partly
93 WALDHEIM	Dec. 30	-5	-3	5	7	3	30		clear
94 WATSON	Jan. 02	-22	-18	0	8	10	15	mostly clear	mostly clear
95 WELDON	Dec. 19	-30	-25	30	50	15	18	partly	mostly clear
96 WEYBURN	Dec. 18	-5	2	0	10	0	1	mostly clear	mostly clear
97 WHITE BEAR	Jan. 01	-5	-2	0	10	3	10	partly	mostly clear
98 WHITEWOOD	Dec. 19	-24	-15	30	70	1	3	mod. snow	light snow
99 YORKTON	Dec. 31	-20	-15	0	10	10	15	overcast	

Table 2 - 1: COUNT COVERAGE

	EFFORT						*HABITAT*													
LOCALITY	# OBSERVERS	KM ON FOOT	HOURS ON FOOT	KM BY VEHICLE	HOURS BY VEHICLE	HOURS AT FEEDERS	EVERGREEN	MIXEDWOOD	DECIDUOUS	ASPEN/FARMLAND	ASPEN/PRAIRIE	PRAIRIE	TAME PASTURE	CULTIVATED	YARDS/SHELTERBELT	URBAN	OPEN WATER	LANDFILL	RIPARIAN	MUSKEG
ARCHERWILL	5			70	2	5		20							60	20				
ARMIT	5	3	3	160	6	1	10	40	40	10										
ASSINIBOIA	7					7									100					
AVONLEA	1			96	3							40		55	5					
BANGOR	8	3	2.5	95	7	7				10	10			30	50					
BEAUVAL	2	5	1.5	110	4.5	0.5	30	30	10						10	10				10
BIGGAR	5	10	4.75	217	9	2				11				50	19	20				
BIG RIVER	2	2	1.5			1.5	50	25					25							
BIRCH HILLS	4	3.5	1.66	108	4	3			15	25				40	5	15				
BODMIN	1	2	1.5					100												
BROADVIEW	3	2	1	115	5				10	15			10	30	20	10	5			
BROMHEAD	2			113	5									90	5				5	
CABRI	1			140	3.75	0.5						5		80	10	5				
CANDLE LAKE	4	4	3	200	9.5			70	20							10				
CLARK'S CROSSING	25	29	17.7	577	31.3	10		1	1	10	4	1	3	10	31	19	4	1	15	
COCHIN	3	4	2	90	3					30	5			50	5	10				
CORONACH	1	4	3	211	6							20		50	5	5	20			
CRAVEN	14	10.5	5	466	18	2			10	20		5	10	20	15	15	5			
CROOKED LAKE	6	1	0.5	150	7	3			25	15				5	15		40			
CROOKED RIVER	2			25	1	7			33		33				34					
CYPRESS HILLS	11	18	5	40	2	2	60	20			5	5			10					
DUCK LAKE	2	8	4	100	3.5			65	5	15				5		10				
EASTEND	5	3	7	105	7	2		10				25		45	10	10				
EMMA LAKE	4	2	2	55	3	4		95							5					
ESTEVAN	3	5	2	160	8	1			25			10		25	10	25	4	1		
ESTUARY	5	8	4	100	5	1					35	30	10	20	5					
FENTON	2	5	1.5	155	6.25	1				5				75	15	5				
FERLAND	5			110	4							50	15	25	10					
FIFE LAKE	2			100	4							10		23	15	2	50			
FORT QU'APPELLE	20	1	1	130	8	50				20				10	20	20	20		10	
FORT WALSH	9	33	16.5	124	12.8			56				1		8	9				26	
GARDINER DAM	14	17	8.5	372	20					4				40	35		17		4	
GOOD SPIRIT	5	4	2	104	7.75	1.25		2	3	5	20	40	2	5	20	2	1			
GOVENLOCK	6	8	4	216	13							50		25	25					
GRASSLANDS		4	2	96	8							50		25	20	5				
GRAYSON	3	8	2	70	5	1			5	35				10	15	5	30			
HARRIS	2	5	2.5	212	6					56				20	15	9				
HEPBURN	2			40	2	2			50							50				
HOLBEIN	2					5								40	60					
INDIAN HEAD	19	11	8	140	8	72				10	2	1	5	9	28	33	12			
KAMSACK	23					20		15	10				25	40		10				
KELVINGTON	3			55	2	7				30				60	10					
KENASTON	1	2	1	30	4	1				20			20	10	25	25				
KENNEDY	2	0.5	0.5	148	5	1		5						50	20	25				
KENOSEE LAKE	2	1	1	176	5	1.5		5	25	30	5					35				
KILWINNING	2	1	1	168	6		10	10		30				50						
KINDERSLEY	2	1	0.5	87	4									8	30	60	2			
KINLOCH	6	8	4	50	1	20	5	20	50	5					20					
KUTAWAGAN LAKE	3	2	1	260	8					20	10	10		40	10	10				
LAIRD	2	2	2	55	4.5	2		20						40	20	20				

Table 2 - 2: COUNT COVERAGE

	EFFORT						*HABITAT*													
LOCALITY	# OBSERVERS	KM ON FOOT	HOURS ON FOOT	KM BY VEHICLE	HOURS BY VEHICLE	HOURS AT FEEDERS	EVERGREEN	MIXEDWOOD	DECIDUOUS	ASPEN/FARMLAND	ASPEN/PRAIRIE	PRAIRIE	TAME PASTURE	CULTIVATED	YARDS/SHELTERBELT	URBAN	OPEN WATER	LANDFILL	RIPARIAN	MUSKEG
LAST MTN. LAKE	4	3	2	160	7					10		30		50	5	4	1			
LEADER (N)	1	3	3	20	3	1					10	25	10	25	20		10			
LEADER (S)	2			100	5	2				40	10	10			20	10	10			
LIVELONG	1					4									100					
LOVE	14			50	3	5		25						25	25	25				
LUSELAND	6	14	6	250	5	4				20	10	5	5	15	20	25				
MACDOWALL	2			50	3	5		20		50					30					
MATADOR	2	6	2.5	80	6.5							50	5	5					40	
MEADOW LAKE	12	9	2	155	5	4			20	40				10		30				
MELFORT	1																			
MELVILLE	4			36	2	3				15					75	10				
MISSINIPE	1					8		100												
MOOSE JAW	29	8.5	9	117	5	8								10		45			45	
MOOSE MOUNTAIN	4	2	1	141	4				50	20	10				10	10				
NIPAWIN	13			74	6	3	20	40		15	10					10	5			
NISBET FOREST	5	2	1.5	64	3	4	10				85				2.5	2.5				
PIKE LAKE	30	34.5	23.3	454	22.3	5			15	10		5		15	15	40				
PORCUPINE PLAIN	4	2	1	58	4	1	10		40						30	20				
PREECEVILLE	3					3									100					
PADDOCKWOOD	5																			
PRINCE ALBERT	21	6.25	4.25	219	17.33	3.75				5	5				5	85				
PRINCE ALBERT NP	7	5	3	9	1.5															
QU'APPELLE V. DAM	3	2	1.9	225	5.6				10	10	10	5	15	20	15	5	10			
RAYMORE	3	5	4	160	5	1				80				10		10				
REGINA	33	48	21	657	31	4			8	3	5	6		30	22	26				
ROCKGLEN	2	1	0.5	150	3							10	40	40	10					
ROUND LAKE	4	1	3	242	8	1				40	10			25	5		20			
SASK. LANDING PP	6	10	5	180	5				10			30	10	35	10		5			
SASK. RIVER FORKS	2	1	1	78	3.75		10	10	20	10			5	20	15		10			
SASKATOON	114	112	75	821	49.8	91	0.2		1.5	17.5	1	0.5	2	6	16	48.8	2	0.5	4	
SHAMROCK	4	1.5	1.5	175	7.5									70	30					
SKULL CREEK	7			50	3	2		10	10		10	10	10	40	10					
SNOWDEN	23			181	6.5	6		10						30	40	20				
SOMME	9	2	1	138	6	25		40			30			10	10	10				
SPALDING	5	5	3	80	5.5	3		40							20	40				
SQUAW RAPIDS	5	15	7	130	10		10	60	10					5	5		10			
STOCKHOLM	2	2	1	50	4	0				25	15			40	20					
SWIFT CURRENT	35	43.5	21	377	59.8	61.5						10		20	10	60				
TISDALE	3			20	1	2				25				25	25	25				
TOGO	3	1	1	5	1	8			80	10	10									
TORCH RIVER	7			58	3	1		25		25				25	25					
TURTLE LAKE	2			50	2	10		20			20			10	50					
WALDHEIM	5			56	3	1								70	15	15				
WATSON	4	1	1	20	1	7				20	20				40	20				
WELDON	2					3									100					
WEYBURN	19	8	4	275	4	1						5		50	10	35				
WHITE BEAR	7	15	5	50	2	5						60		30	10					
WHITEWOOD	18	3	2.5	356	14.5	35				25					15	60				
YORKTON		1	0.5	51	4					20	20				10	50				

Table 3-1. SPECIES RECORDED FROM NINE OR MORE LOCALITIES
(0 = a species recorded during count period but not seen on count day)

SPECIES / *LOCALITY & DATE*	1.ARCHERWILL December 30, 1999	2.ARMIT December 27, 1999	3. ASSINIBOIA January 03, 2000	4.AVONLEA January 02, 2000	5.BANGOR December 17, 1999	6.BEAUVAL December 26, 1999	7.BIGGAR December 27, 1999	8.BIG RIVER January 02, 2000	9.BIRCH HILLS December 20, 1999	10.BODMIN December 24, 1999
CANADA GOOSE			30							
MALLARD							7			
COMMON GOLDENEYE										
BALD EAGLE		2			2		0		0	
NORTHERN GOSHAWK	1									
ROUGH-LEGGED HAWK										
GOLDEN EAGLE			4							
MERLIN										
PRAIRIE FALCON										
GRAY PARTRIDGE			33							
RING-NECKED PHEASANT										
RUFFED GROUSE	11	4			0	4			1	1
SHARP-TAILED GROUSE		5		7	0		17			
ROCK DOVE				5	4		205		42	
GREAT HORNED OWL		1	3	1	0		1		1	
SNOWY OWL		0	3						1	
SHORT-EARED OWL										
DOWNY WOODPECKER	2				8	0	1		7	
HAIRY WOODPECKER	3	1			8	2		1	7	1
PILEATED WOODPECKER	1					1		1	1	0
HORNED LARK				41			15			
GRAY JAY	2	1				11		2		2
BLUE JAY	18	1				6		3	4	3
BLACK-BILLED MAGPIE	17	34	53	5	15	22	95	1	47	
COMMON RAVEN	9	58			13	66	18	13	12	1
BLACK-CAPPED CHICKADEE	42	29	2		41	9	21	4	34	4
BOREAL CHICKADEE	3	1				6				
RED-BREASTED NUTHATCH	2				4	1	9	3		
WHITE-BREAST NUTHATCH	3									
GOLDEN-CROWNED KINGLET							3			
AMERICAN ROBIN							0			
BOHEMIAN WAXWING							15		58	
CEDAR WAXWING	50						0			
NORTHERN SHRIKE		1								
EUROPEAN STARLING										
AMERICAN TREE SPARROW					1					
DARK-EYED JUNCO (S-C)	1	1					0			
SNOW BUNTING	350	28	20	10	50				113	
PINE GROSBEAK	54	25				9			1	2
HOUSE FINCH							18			
COMMON REDPOLL	123	895		116	226	127	282		96	18
HOARY REDPOLL		11				8	4		2	
PINE SISKIN						6				0
EVENING GROSBEAK	73	25				50				
HOUSE SPARROW	160	5	205		59		332		149	
INDIVIDUALS ON COUNT DAY	926	1128	353	185	435	345	1094	28	578	32
SPECIES ON COUNT DAY	21	19	9	7	14	20	17	8	19	8
SPECIES COUNT PERIOD	21	20	9	7	17	21	21	8	20	10
INDIVIDUALS IN TABLES 4&5	1	0	0	0	4	17	51	0	2	0
SPECIES IN TABLES 4 & 5	1	0	0	0	2	5	2	0	2	0

Table 3-2. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

11.BROADVIEW December 26, 1999	12.BROMHEAD January 02, 2000	13.CABRI December 25, 1999	14.CANDLE LAKE December 30, 1999	15.CLARK'S CROS. December 18, 1999	16.COCHIN December 27, 1999	17.CORONACH December 22, 1999	18.CRAVEN December 18, 1999	19.CROOKED L. December 18, 1999	20.CROOKED R. December 30, 1999	*LOCALITY & DATE* *SPECIES*
				1105		670		812		CANADA GOOSE
				1		7950	1	143		MALLARD
				81		30	3	4		COMMON GOLDENEYE
				4		1	3	3		BALD EAGLE
				2						NORTHERN GOSHAWK
				1		3	5			ROUGH-LEGGED HAWK
	1					2	2	1		GOLDEN EAGLE
										MERLIN
	2					1				PRAIRIE FALCON
		5		35	16	46	11			GRAY PARTRIDGE
	12					5				RING-NECKED PHEASANT
					1			1	2	RUFFED GROUSE
	6	20		19	6	35	2			SHARP-TAILED GROUSE
46	2	26		204	40	53	76	80		ROCK DOVE
	4			2	3	2		1		GREAT HORNED OWL
	1	1		2	1	2				SNOWY OWL
						1				SHORT-EARED OWL
1			1	5	1	1	15	4	2	DOWNY WOODPECKER
				13			7	4	3	HAIRY WOODPECKER
					2					PILEATED WOODPECKER
	82	31			25	363				HORNED LARK
			6							GRAY JAY
			2	2	1		14	10	4	BLUE JAY
24	4	25	7	311	12	141	101	42	8	BLACK-BILLED MAGPIE
13			200	36	5		2	38	57	COMMON RAVEN
7			60	102	2	2	73	114	11	BLACK-CAPPED CHICKADEE
			22							BOREAL CHICKADEE
2		0	2	7	2		5	4		RED-BREASTED NUTHATCH
1							10	2		WHITE-BREAST NUTHATCH
							3	2		GOLDEN-CROWNED KINGLET
						1	0	10		AMERICAN ROBIN
0		10		0	50	52		368		BOHEMIAN WAXWING
								38		CEDAR WAXWING
				1		1	3		0	NORTHERN SHRIKE
	4			33		7	7	6		EUROPEAN STARLING
						3				AMERICAN TREE SPARROW
				1		1	2			DARK-EYED JUNCO (S-C)
3	773			70	15	855	2			SNOW BUNTING
			2						14	PINE GROSBEAK
6										HOUSE FINCH
161	41	30	123	2100	7	387	245	143	20	COMMON REDPOLL
3	5			24		2	15	2	5	HOARY REDPOLL
							3			PINE SISKIN
			5						74	EVENING GROSBEAK
112	90	129		998	9	710	456	105	4	HOUSE SPARROW
379	1950	291	433	5160	198	11394	1079	1949	204	INDIVIDUALS ON COUNT DAY
12	15	10	12	26	18	42	28	30	12	SPECIES ON COUNT DAY
13	15	11	12	28	18	42	30	30	13	SPECIES COUNT PERIOD
0	923	14	3	1	0	67	13	12	0	INDIVIDUALS IN TABLES 4 & 5
0	2	1	1	2	0	14	4	6	0	SPECIES IN TABLES 4 & 5

Table 3-3. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

SPECIES / *LOCALITY & DATE*	21.CYPRESS HILLS December 30, 1999	22.DUCK LAKE December 19, 1999	23.EASTEND December 27, 1999	24.EMMA LAKE January 01, 2000	25.ESTEVAN December 23, 1999	26.ESTUARY December 31, 1999	27.FENTON December 18, 1999	28.FERLAND December 30, 1999	29.FIFE LAKE December 28, 1999	30.FT. QU'APPELLE December 18, 1999
CANADA GOOSE			0		3431				156	3012
MALLARD			1		10020				8662	243
COMMON GOLDENEYE					9				6	0
BALD EAGLE	1		1						1	3
NORTHERN GOSHAWK			1							
ROUGH-LEGGED HAWK	4				1					1
GOLDEN EAGLE			0		1			2		2
MERLIN			1		1				1	0
PRAIRIE FALCON					1	1		0		
GRAY PARTRIDGE							6		7	0
RING-NECKED PHEASANT			3		1	5			1	
RUFFED GROUSE	1	1		0			1			2
SHARP-TAILED GROUSE		6				1	10	1	10	
ROCK DOVE	5	14	23		176	39	17		2	50
GREAT HORNED OWL	1	1	2		1			1		0
SNOWY OWL			0		1				1	0
SHORT-EARED OWL										
DOWNY WOODPECKER	2		4	6	2	4	3			7
HAIRY WOODPECKER	10	1		6	2		5			6
PILEATED WOODPECKER				0		1	0			
HORNED LARK									74	
GRAY JAY										0
BLUE JAY	1		0	2	1	2	1			23
BLACK-BILLED MAGPIE	7		31		33	77	42	8	4	39
COMMON RAVEN	12	23		309			19			27
BLACK-CAPPED CHICKADEE	93	4	12	69	29	17	32			106
BOREAL CHICKADEE		3		19						
RED-BREASTED NUTHATCH	41		8	7						6
WHITE-BREAST NUTHATCH				5	11					12
GOLDEN-CROWNED KINGLET			1							
AMERICAN ROBIN						8				0
BOHEMIAN WAXWING	45	19	0			320	0			0
CEDAR WAXWING										
NORTHERN SHRIKE							0			
EUROPEAN STARLING		2	3		96	1			2	
AMERICAN TREE SPARROW	1		9							
DARK-EYED JUNCO (S-C)			1			1				
SNOW BUNTING	30	30			30		400	30		100
PINE GROSBEAK	3			67			0			
HOUSE FINCH			1		7					15
COMMON REDPOLL	145	32	27	99	39	61	209	8	1	192
HOARY REDPOLL							2			0
PINE SISKIN					6					30
EVENING GROSBEAK				30			0			
HOUSE SPARROW		9	173		87	58	43	0	30	174
INDIVIDUALS ON COUNT DAY	410	145	302	619	14044	603	790	51	8962	4063
SPECIES ON COUNT DAY	19	13	18	11	32	17	14	7	16	27
SPECIES COUNT PERIOD	19	13	23	14	32	17	19	9	16	40
INDIVIDUALS IN TABLES 4&5	8	0	0	0	58	7	0	1	4	13
SPECIES IN TABLES 4 & 5	2	0	0	1	9	2	0	1	1	11

Table 3-4. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

31.FORT WALSH December 18, 1999	32.GARDINER DAM December 20, 1999	33.GOOD SPIRIT December 29, 1999	34.GOVENLOCK December 19, 1999	35.GRASSLAND NP December 17, 1999	36.GRAYSON December 23, 1999	37.HARRIS January 03, 2000	38.HEPBURN December 29, 1999	39.HOLBIEN December 31, 1999	40.INDIAN HEAD December 27, 1999	*LOCALITY & DATE* *SPECIES*
	776				107				200	CANADA GOOSE
13	7275				157				137	MALLARD
	84				3					COMMON GOLDENEYE
5	33		1		1				5	BALD EAGLE
4									1	NORTHERN GOSHAWK
2										ROUGH-LEGGED HAWK
5	2			1		1			4	GOLDEN EAGLE
1										MERLIN
			1							PRAIRIE FALCON
13	49			12		17				GRAY PARTRIDGE
5			8	4						RING-NECKED PHEASANT
7		4			1				2	RUFFED GROUSE
0	194		8	33	0	172			5	SHARP-TAILED GROUSE
	90	2			63	83			128	ROCK DOVE
5	3		5	1		2			2	GREAT HORNED OWL
	3		7		1					SNOWY OWL
						5				SHORT-EARED OWL
	3	1	1		3	2	0	2	9	DOWNY WOODPECKER
1	1	1			2		0	2	8	HAIRY WOODPECKER
		1								PILEATED WOODPECKER
5	1		712	15		8				HORNED LARK
										GRAY JAY
1		5			7			4	2	BLUE JAY
197	249	42	26	46	23	183	3	2	52	BLACK-BILLED MAGPIE
	8	28			3	7	0	2	11	COMMON RAVEN
78	23	23		1	20	20	3	11	60	BLACK-CAPPED CHICKADEE
								1		BOREAL CHICKADEE
12	6	2					0	1	27	RED-BREASTED NUTHATCH
		1						1	18	WHITE-BREAST NUTHATCH
15					10				1	GOLDEN-CROWNED KINGLET
0					3					AMERICAN ROBIN
129	30	12			60					BOHEMIAN WAXWING
7										CEDAR WAXWING
2				1	1			1	1	NORTHERN SHRIKE
3	1		5	9		7			1	EUROPEAN STARLING
1	2		3	20						AMERICAN TREE SPARROW
			1				0			DARK-EYED JUNCO (S-C)
78	320	48	47	3	22	4445			155	SNOW BUNTING
		5						8		PINE GROSBEAK
										HOUSE FINCH
70	536	186	97	40	106	255	0	25	235	COMMON REDPOLL
	2					1			3	HOARY REDPOLL
									25	PINE SISKIN
								35	2	EVENING GROSBEAK
185	889	20	263	48	47	242	0		118	HOUSE SPARROW
913	10895	381	1216	235	640	5450	6	94	1220	INDIVIDUALS ON COUNT DAY
36	34	16	21	15	20	16	2	13	30	SPECIES ON COUNT DAY
38	34	16	21	15	23	16	9	13	30	SPECIES COUNT PERIOD
69	315	0	31	1	0	0	0	0	8	INDIVIDUALS IN TABLES 4&5
13	11	0	7	1	2	0	0	0	4	SPECIES IN TABLES 4 & 5

Table 3-5. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

SPECIES / *LOCALITY & DATE*	41.KAMSACK December 26, 1999	42.KELVINGTON December 28, 1999	43.KENASTON December 23, 1999	44.KENNEDY December 30, 1999	45.KENOSEE LAKE December 28, 1999	46.KILLWINNING December 22, 1999	47.KINDERSLEY December 27, 1999	48.KINLOCH December 18, 1999	49.KUTAWAGAN L. December 24, 1999
CANADA GOOSE									
MALLARD									
COMMON GOLDENEYE									
BALD EAGLE	3								
NORTHERN GOSHAWK								0	1
ROUGH-LEGGED HAWK			0						
GOLDEN EAGLE			1						
MERLIN					1				
PRAIRIE FALCON									
GRAY PARTRIDGE			16				16		7
RING-NECKED PHEASANT									
RUFFED GROUSE	8	4			1	4		5	
SHARP-TAILED GROUSE	12		9		11	7		0	7
ROCK DOVE			119	14	1	1	7	0	29
GREAT HORNED OWL	2				1	1			1
SNOWY OWL	2		2				1		3
SHORT-EARED OWL									9
DOWNY WOODPECKER	25	1		2	9	2		4	1
HAIRY WOODPECKER	15	2		2	17	1		5	1
PILEATED WOODPECKER		0			1			2	
HORNED LARK									
GRAY JAY	8	2				3		8	
BLUE JAY	38				10	5		16	
BLACK-BILLED MAGPIE	16	7	22	22	32	58	33	9	110
COMMON RAVEN	9	3	0		7	29		15	
BLACK-CAPPED CHICKADEE	87	6	4	29	64	24		37	4
BOREAL CHICKADEE	13					2		2	
RED-BREASTED NUTHATCH	22			3	8				
WHITE-BREAST NUTHATCH	9				8			6	
GOLDEN-CROWNED KINGLET					6				
AMERICAN ROBIN	4								
BOHEMIAN WAXWING	100	60						35	0
CEDAR WAXWING									
NORTHERN SHRIKE									
EUROPEAN STARLING			3	6					2
AMERICAN TREE SPARROW									
DARK-EYED JUNCO (S-C)	132								
SNOW BUNTING	100	1000	82			100	200	35	105
PINE GROSBEAK	95					1		24	
HOUSE FINCH				3	1				
COMMON REDPOLL	563	60	125	132	209	155	5	145	133
HOARY REDPOLL	36			1				26	
PINE SISKIN	68					1			
EVENING GROSBEAK	308				1	3		104	
HOUSE SPARROW	145	3	65	406	89	141	50	27	425
INDIVIDUALS ON COUNT DAY	1820	1148	449	631	483	538	312	505	838
SPECIES ON COUNT DAY	25	11	12	12	21	18	7	18	15
SPECIES COUNT PERIOD	25	12	14	12	21	18	8	21	16
INDIVIDUALS IN TABLES 4 &	0	0	1	11	6	0	0	0	0
SPECIES IN TABLES 4 & 5	0	0	1	1	2	0	1	0	0

Table 3-6. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

50.LAIRD December 28, 1999	51.LAST MT. LAKE December 26, 1999	52.LEADER (N) December 27, 1999	53.LEADER (S) December 18, 1999	54.LIVELONG December 21, 1999	55.LOVE December 24, 1999	56.LUSELAND December 26, 1999	57.MACDOWALL December 25, 1999	58.MATADOR December 27, 1999	*LOCALITY & DATE* *SPECIES*
			2						CANADA GOOSE
	0	2							MALLARD
									COMMON GOLDENEYE
			5			1			BALD EAGLE
					1				NORTHERN GOSHAWK
			1			0			ROUGH-LEGGED HAWK
		1	1					0	GOLDEN EAGLE
									MERLIN
								1	PRAIRIE FALCON
14	22	15			0	22			GRAY PARTRIDGE
		16							RING-NECKED PHEASANT
				0	1		0		RUFFED GROUSE
5	52					1	0	27	SHARP-TAILED GROUSE
	171	3	22	40	15	69	50	0	ROCK DOVE
	2				1	0			GREAT HORNED OWL
	3	1	2			0		1	SNOWY OWL
	0					0			SHORT-EARED OWL
3		1	1	6	6	1	2	0	DOWNY WOODPECKER
2			1	8	8	1	2		HAIRY WOODPECKER
					1				PILEATED WOODPECKER
			20			8			HORNED LARK
					8				GRAY JAY
				5	15	2	4		BLUE JAY
15	135	6	60	3	7	45	4	6	BLACK-BILLED MAGPIE
8				20	141		12		COMMON RAVEN
3	5	4	5	30	64	7	10	4	BLACK-CAPPED CHICKADEE
					2				BOREAL CHICKADEE
2			1		3	0	3		RED-BREASTED NUTHATCH
				2	3				WHITE-BREAST NUTHATCH
									GOLDEN-CROWNED KINGLET
			1				1		AMERICAN ROBIN
0		12		0	20	0	50		BOHEMIAN WAXWING
						0	2		CEDAR WAXWING
									NORTHERN SHRIKE
		0	16						EUROPEAN STARLING
									AMERICAN TREE SPARROW
					1	0			DARK-EYED JUNCO (S-C)
	30		12		20	397	100	294	SNOW BUNTING
				25	28		6		PINE GROSBEAK
			2						HOUSE FINCH
15	383	4	1	40	187	514	50	15	COMMON REDPOLL
	1					5	4		HOARY REDPOLL
									PINE SISKIN
				28	212		15		EVENING GROSBEAK
10	265	10	200	30	54	47			HOUSE SPARROW
77	1070	75	355	237	800	1120	316	348	INDIVIDUALS ON COUNT DAY
10	12	12	20	12	24	14	17	7	SPECIES ON COUNT DAY
11	14	14	20	15	25	22	20	10	SPECIES COUNT PERIOD
0	1	0	2	0	2	0	1	0	INDIVIDUALS IN TABLES 4&5
0	1	1	2	1	2	0	2	0	SPECIES IN TABLES 4 & 5

Table 3-7. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

SPECIES / *LOCALITY & DATE*	59.MEADOW L. December 26, 1999	60.MELFORT December 26, 1999	61.MELVILLE December 25, 1999	62.MISSINIPE January 02, 2000	63.MOOSE JAW December 26, 1999	64.MOOSE MTN. December 30, 1999	65.NIPAWIN December 30, 1999	66.NISBET WEST January 01,2000	67.PIKE LAKE January 02, 2000
CANADA GOOSE		0							
MALLARD									
COMMON GOLDENEYE									
BALD EAGLE									
NORTHERN GOSHAWK									
ROUGH-LEGGED HAWK					1				
GOLDEN EAGLE									
MERLIN					0				2
PRAIRIE FALCON									
GRAY PARTRIDGE		7					6		
RING-NECKED PHEASANT					2				
RUFFED GROUSE								1	
SHARP-TAILED GROUSE	20				20			0	48
ROCK DOVE	45		8		579	27	49		48
GREAT HORNED OWL					2				
SNOWY OWL			0						
SHORT-EARED OWL									
DOWNY WOODPECKER	1	1	1	1	10	6	3	2	10
HAIRY WOODPECKER	3	1	1		7	6	0	4	11
PILEATED WOODPECKER	1						1		
HORNED LARK									
GRAY JAY	3			2			1		
BLUE JAY	3			2	1	4	9	9	14
BLACK-BILLED MAGPIE	15		2		62	33	5	3	144
COMMON RAVEN	89	10	6	2		4	151	8	45
BLACK-CAPPED CHICKADEE	61	3	11	6	40	35	36	30	310
BOREAL CHICKADEE				2				3	
RED-BREASTED NUTHATCH	4				27	3	6		0
WHITE-BREAST NUTHATCH					2	5		2	6
GOLDEN-CROWNED KINGLET									
AMERICAN ROBIN									15
BOHEMIAN WAXWING		25	40		0		733	0	321
CEDAR WAXWING									
NORTHERN SHRIKE								0	1
EUROPEAN STARLING							7		
AMERICAN TREE SPARROW									
DARK-EYED JUNCO (S-C)					20				
SNOW BUNTING		25					75	350	288
PINE GROSBEAK	32	5		12			48	16	
HOUSE FINCH					27				1
COMMON REDPOLL	141	12	30	27	31	383	360	216	1042
HOARY REDPOLL								5	27
PINE SISKIN					2				
EVENING GROSBEAK	27	55					198	125	
HOUSE SPARROW		50	40		460	49			302
INDIVIDUALS ON COUNT DAY	445	194	139	54	1299	598	1688	774	2639
SPECIES ON COUNT DAY	14	11	9	8	21	13	16	14	22
SPECIES COUNT PERIOD	14	12	10	8	24	13	17	18	23
INDIVIDUALS IN TABLES 4&5	0	0	0	0	6	43	0	0	4
SPECIES IN TABLES 4 & 5	0	0	0	0	5	2	0	1	4

Table 3-8. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

68.PORCUPINE PL. December 27,1999	69 PREECEVILLE January 01, 2000	70 PADDOCKWOOD December 19, 1999	71.PRINCE ALBERT December 19,1999	72.PRINCE ALB. NP December 20, 1999	73 QU'APPELLE V. December 19, 1999	74.RAYMORE December 25, 1999	75.REGINA December 26, 1999	76 ROCKGLEN December 30, 1999	*LOCALITY & DATE* *SPECIES*
					2220	0	2130	0	CANADA GOOSE
					192	0	4		MALLARD
					3				COMMON GOLDENEYE
			0		3	0			BALD EAGLE
						1			NORTHERN GOSHAWK
					7	0	0		ROUGH-LEGGED HAWK
					1			0	GOLDEN EAGLE
			1			0	2	0	MERLIN
							1	1	PRAIRIE FALCON
		11	6			4	54	26	GRAY PARTRIDGE
							6	0	RING-NECKED PHEASANT
			1	2		2			RUFFED GROUSE
		2	7			2	1	19	SHARP-TAILED GROUSE
	14	11	99		18	59	764	2	ROCK DOVE
		1	1			7	4	1	GREAT HORNED OWL
		2				1	7		SNOWY OWL
								0	SHORT-EARED OWL
2	4	7	14			1	8		DOWNY WOODPECKER
	4	9	13			3	2		HAIRY WOODPECKER
	2		1						PILEATED WOODPECKER
						0	1	95	HORNED LARK
		3	8	5					GRAY JAY
1		11	22						BLUE JAY
6	12	38	80	6	27	73	208	3	BLACK-BILLED MAGPIE
7	1		126	4	8	4			COMMON RAVEN
7	8	22	165	25		16	32		BLACK-CAPPED CHICKADEE
			14	25					BOREAL CHICKADEE
		3	8	2		1	38		RED-BREASTED NUTHATCH
1			6				8		WHITE-BREAST NUTHATCH
						1	1		GOLDEN-CROWNED KINGLET
			0			1	1		AMERICAN ROBIN
	33		1078			48	1		BOHEMIAN WAXWING
									CEDAR WAXWING
			2			0			NORTHERN SHRIKE
						42	191		EUROPEAN STARLING
									AMERICAN TREE SPARROW
			18			0	25		DARK-EYED JUNCO (S-C)
			191		378	7	424		SNOW BUNTING
4	6	47	47	11		0			PINE GROSBEAK
							60		HOUSE FINCH
36	117	214	555		55	252	304	106	COMMON REDPOLL
						1	6		HOARY REDPOLL
			31				8		PINE SISKIN
50	10	95	245						EVENING GROSBEAK
15	10	62	419		60	541	1156		HOUSE SPARROW
129	221	539	3159	102	2974	1067	5499	473	INDIVIDUALS ON COUNT DAY
10	12	17	27	11	12	21	35	9	SPECIES ON COUNT DAY
10	12	17	29	11	12	34	36	15	SPECIES COUNT PERIOD
0	0	1	1	22	2	0	52	220	INDIVIDUALS IN TABLES 4&5
0	0	1	1	3	1	4	7	2	SPECIES IN TABLES 4 & 5

Table 3-9. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

SPECIES / *LOCALITY & DATE*	77.ROUND LAKE December 20, 1999	78.SK. LANDING PP December 21,1999	79.SASK. R. FORKS December 20, 1999	80.SASKATOON December 26, 1999	81.SHAMROCK December 29, 1999	82.SKULL CREEK December 26, 1999	83.SNOWDEN December 27, 1999	84.SOMME December 27, 1999	85.SPALDING December 27, 1999
CANADA GOOSE	175	0		5					
MALLARD	180	24		20					
COMMON GOLDENEYE	3			107					
BALD EAGLE	5	1		1				0	
NORTHERN GOSHAWK	1			2					
ROUGH-LEGGED HAWK				1					
GOLDEN EAGLE	2	3			1	1			
MERLIN				2					
PRAIRIE FALCON						1			
GRAY PARTRIDGE		55		25	21	5	11	8	
RING-NECKED PHEASANT		2							
RUFFED GROUSE	1						9	2	1
SHARP-TAILED GROUSE		111		43		10	4	1	
ROCK DOVE	5	104		2133	4	6	10	27	6
GREAT HORNED OWL	2	2		3	1	2		2	
SNOWY OWL				0	1			0	
SHORT-EARED OWL	1								
DOWNY WOODPECKER	13	1		31		4	10	2	1
HAIRY WOODPECKER	10		3	26		1	19	3	1
PILEATED WOODPECKER			2				1	1	
HORNED LARK	0	6			15	30			
GRAY JAY							14	9	
BLUE JAY	7		2	64		4	31	6	
BLACK-BILLED MAGPIE	38	67	23	947	19	40	40	23	14
COMMON RAVEN	13		50	35			252	33	5
BLACK-CAPPED CHICKADEE	97	12	17	632		20	103	44	4
BOREAL CHICKADEE			1				11		
RED-BREASTED NUTHATCH				184		1	3	1	1
WHITE-BREAST NUTHATCH	13			6			1	3	
GOLDEN-CROWNED KINGLET	2			2					
AMERICAN ROBIN		3		10		9			
BOHEMIAN WAXWING	8	45	2	172			25	0	
CEDAR WAXWING				105					
NORTHERN SHRIKE	1								
EUROPEAN STARLING	1			23				4	
AMERICAN TREE SPARROW						30			
DARK-EYED JUNCO (S-C)				12					0
SNOW BUNTING		3759	20	6	60		21	50	
PINE GROSBEAK				6			67	4	
HOUSE FINCH	1			247					
COMMON REDPOLL	587	84	222	2252		70	442	116	35
HOARY REDPOLL	3			16				2	2
PINE SISKIN				11					25
EVENING GROSBEAK			41				199	33	
HOUSE SPARROW	176	159	2	4019	315	33	27	52	20
INDIVIDUALS ON COUNT DAY	1350	4443	385	11208	440	268	1302	426	115
SPECIES ON COUNT DAY	29	21	12	40	11	18	23	22	12
SPECIES COUNT PERIOD	31	22	12	44	11	18	25	25	14
INDIVIDUALS IN TABLES 4&5	5	5	0	60	3	1	2	0	0
SPECIES IN TABLES 4 & 5	5	4	0	14	2	1	4	0	1

Table 3-10. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

86.SQUAW RAPIDS December 28, 1999	87.STOCKHOLM December 28, 1999	88.SWIFT CURR. January 02, 2000	89.TISDALE December 24, 1999	90.TOGO December 24, 1999	91.TORCH R. January 02, 2000	92.TURTLE L. December 20, 1999	93.WALDHEIM December 30, 1999	94.WATSON January 02, 2000	*LOCALITY & DATE* *SPECIES*
	2					15			CANADA GOOSE
2		1							MALLARD
448		1							COMMON GOLDENEYE
6	2	0							BALD EAGLE
									NORTHERN GOSHAWK
		1			0				ROUGH-LEGGED HAWK
									GOLDEN EAGLE
		0							MERLIN
		0							PRAIRIE FALCON
3	0	123			8	7			GRAY PARTRIDGE
		1							RING-NECKED PHEASANT
5				1	10	15			RUFFED GROUSE
11	3	11			10	25	12	12	SHARP-TAILED GROUSE
	5	287					11		ROCK DOVE
2		1							GREAT HORNED OWL
	0	3		1		2	1	0	SNOWY OWL
		1							SHORT-EARED OWL
3		1	1	2	3	4	2	1	DOWNY WOODPECKER
4	1			2	5	6	2	2	HAIRY WOODPECKER
7					2	3			PILEATED WOODPECKER
		66							HORNED LARK
36					5	7			GRAY JAY
25				2	8	15	4		BLUE JAY
63	4	118	2		15	20	15	3	BLACK-BILLED MAGPIE
89	10		3		39	40	9		COMMON RAVEN
28	25	0	2	10	30	7	7	8	BLACK-CAPPED CHICKADEE
18						3			BOREAL CHICKADEE
1		9				2	8		RED-BREASTED NUTHATCH
1		0			4	4			WHITE-BREAST NUTHATCH
		0							GOLDEN-CROWNED KINGLET
		0							AMERICAN ROBIN
1			10	20			5		BOHEMIAN WAXWING
		0				50			CEDAR WAXWING
				1			0		NORTHERN SHRIKE
									EUROPEAN STARLING
		1							AMERICAN TREE SPARROW
		11							DARK-EYED JUNCO (S-C)
50	500	1171			142	50	20	17	SNOW BUNTING
44					19				PINE GROSBEAK
		32					5		HOUSE FINCH
187		23	8	30	43	100	75	24	COMMON REDPOLL
5	1				6	35			HOARY REDPOLL
		5				10			PINE SISKIN
104					140	75			EVENING GROSBEAK
25	25	2047	6				50	11	HOUSE SPARROW
1282	578	3932	32	69	489	501	226	85	INDIVIDUALS ON COUNT DAY
34	11	22	7	9	17	25	15	10	SPECIES ON COUNT DAY
34	14	32	7	9	19	25	17	11	SPECIES COUNT PERIOD
114	0	18	0	0	0	6	0	7	INDIVIDUALS IN TABLES 4&5
12	1	3	0	0	1	3	1	2	SPECIES IN TABLES 4 & 5

Table 3-11. SPECIES RECORDED FROM NINE OR MORE LOCALITIES

(0 = a species recorded during count period but not seen on count day)

SPECIES / *LOCALITY & DATE*	95. WELDON December 19, 1999	96. WEYBURN December 18, 1999	97. WHITE BEAR January 01, 2000	98. WHITEWOOD December 19, 1999	99. YORKTON December 31, 1999	TOTAL INDIVIDUALS	NUMBER OF COUNTS COUNT	NUMBER OF COUNTS COUNT
CANADA GOOSE		165		168		15181	19	24
MALLARD					24	35059	22	24
COMMON GOLDENEYE						782	13	14
BALD EAGLE				0		93	24	31
NORTHERN GOSHAWK			0			15	10	12
ROUGH-LEGGED HAWK		0		1		29	13	19
GOLDEN EAGLE		2				41	22	25
MERLIN		1		0		13	10	16
PRAIRIE FALCON			0			10	9	12
GRAY PARTRIDGE			58	10		810	38	41
RING-NECKED PHEASANT		1	0			72	15	17
RUFFED GROUSE	2			2	1	122	37	41
SHARP-TAILED GROUSE		30	33	11	12	1146	52	58
ROCK DOVE		115	107	40	147	6746	66	68
GREAT HORNED OWL		1	0	2	1	86	44	48
SNOWY OWL		1	1		1	60	31	40
SHORT-EARED OWL				0		17	5	9
DOWNY WOODPECKER	2	2	1	9	3	328	75	78
HAIRY WOODPECKER	2	1		5	6	323	66	68
PILEATED WOODPECKER						33	20	24
HORNED LARK		29	1	3		1646	23	25
GRAY JAY						146	22	23
BLUE JAY	3	0		0	2	461	54	57
BLACK-BILLED MAGPIE	6	94	128	55	57	5126	93	93
COMMON RAVEN	7			43	36	2363	64	66
BLACK-CAPPED CHICKADEE	20	10		128	46	3602	87	88
BOREAL CHICKADEE						151	19	19
RED-BREASTED NUTHATCH		1		2	4	502	48	52
WHITE-BREAST NUTHATCH	2	2		5	1	164	33	34
GOLDEN-CROWNED KINGLET		4			1	52	14	15
AMERICAN ROBIN						67	13	19
BOHEMIAN WAXWING			0	0	36	4048	37	51
CEDAR WAXWING						252	6	9
NORTHERN SHRIKE		1		1		19	15	20
EUROPEAN STARLING		26	0	25	41	574	29	31
AMERICAN TREE SPARROW						71	10	10
DARK-EYED JUNCO (S-C)		15				243	16	21
SNOW BUNTING	11	961	139	450		19667	64	64
PINE GROSBEAK		2				739	33	35
HOUSE FINCH				0		426	15	16
COMMON REDPOLL	20	70	95	646	322	19571	93	94
HOARY REDPOLL	20			3		294	35	36
PINE SISKIN		25				256	15	16
EVENING GROSBEAK	9				5	2376	31	32
HOUSE SPARROW		812	100	254	145	19318	77	79
INDIVIDUALS ON COUNT DAY	104	2410	663	1863	898			
SPECIES ON COUNT DAY	12	29	10	22	22			
SPECIES COUNT PERIOD	12	31	16	29	22			
INDIVIDUALS IN TABLES 4 &	0	39	0	0	7			
SPECIES IN TABLES 4 & 5	0	5	0	2	2			

Table 4 - 1. SPECIES SEEN IN NINE OR FEWER LOCATIONS

SPECIES	*LOCATION AND NUMBERS*
WESTERN GREBE	Coronach, 1.
AMERICAN WHITE PELICAN	Swift Current, +.
DOUBLE-CRESTED CORMORANT	Gardiner Dam, 1.
SNOW GOOSE	Coronach, 1; Fort Qu'Appelle, 1; Raymore, +; Weyburn, 4.
GREEN-WINGED TEAL	Crooked Lake, 2; Estevan, 1; Govenlock, 1.
AMERICAN BLACK DUCK	Coronach, 1; Round Lake, +.
NORTHERN PINTAIL	Fort Qu'Appelle, 1; Gardiner Dam, 1; Saskatchewan Landing Provincial Park, 1.
GADWALL	Crooked Lake, 1.
CANVASBACK	Round Lake, 1; Saskatoon, 1.
REDHEAD	Estevan, 2; Fort Qu'Appelle, 1; Gardiner Dam, 15; Indian Head, 2.
LESSER SCAUP	Crooked Lake, 6; Estevan, 4; Fort Qu'Appelle, +; Gardiner Dam, 5; Indian Head, 1; Raymore, +.Whitewood, +.
BUFFLEHEAD	Coronach, 1; Crooked Lake, 1; Fife Lake, 1; Gardiner Dam, 2; Grayson, +; Round Lake, 1; Squaw Rapids, 1.
HOODED MERGANSER	Fort Qu'Appelle, 2; Saskatoon, +.
COMMON MERGANSER	Coronach, 2; Crooked Lake, 1; Estevan, 15; Fort Qu'Appelle, 1; Gardiner Dam, 207; Grayson, +; Round Lake, 1; Squaw Rapids, 8.
NORTHERN HARRIER	Clark's Crossing, +; Coronach, 1; Craven, 1; Estevan, 1; Ferland, 1; Gardiner Dam, 1; Govenlock, 1; Rockglen, +.
COOPER'S HAWK	Pike Lake, 1.
RED-TAILED HAWK	Coronach, 1; Gardiner Dam, 1; Kenaston, 1; Saskatoon, 1.
HARLAN'S HAWK	Fort Walsh, 1.
FERRUGINOUS HAWK	Leader (south), 1.
AMERICAN KESTREL	Regina, 1; Whitewood, +.
PEREGRINE FALCON	Moose Jaw, +.
GYRFALCON	Fort Qu'Appelle, +; Leader (south), 1; Pike Lake, 1; Skull Creek, 1.
CHUKAR	Spalding, +.
SPRUCE GROUSE	Beauval, 2; Squaw Rapids, 25; Torch River Valley, +; Turtle Lake, 3.
SAGE GROUSE	Govenlock, 2.
WILD TURKEY	Cabri, 14; Cypress Hills Provincial Park, 5; Estuary, 5; Fort Walsh, 2; Kennedy, 11; MacDowall, 1.
AMERICAN COOT	Coronach, 23; Estevan, 23.
KILLDEER	Govenlock, 1.
COMMON SNIPE	Fort Walsh, 1; Saskatchewan Landing Provincial Park, 1.
RING-BILLED GULL	Coronach, 1.
HERRING GULL	Gardiner Dam, 1.
EURASIAN COLLARED-DOVE	Regina, 2; Weyburn, 2.
MOURNING DOVE	Gardiner Dam, 1; Leader (north), +; Weyburn, 2.
NORTHERN HAWK-OWL	Moose Jaw, 1; Snowden, +; Squaw Rapids, 2.
BARRED OWL	Love, 1; Squaw Rapids, 1; Stockholm, +.
GREAT GRAY OWL	Beauval, 2; Nisbet Forest, +; Paddockwood, 1; Prince Albert, 1; Turtle Lake, 2.
BOREAL OWL	Snowden, 1.
NORTHERN SAW-WHET OWL	Livelong, +.
THREE-TOED WOODPECKER	Emma Lake, +; Squaw Rapids, 4.
BLACK-BACKED WOODPECKER	Beauval, 2; Squaw Rapids, 1.
NORTHERN FLICKER (Y-S)	Estuary, 2; Fort Qu'Appelle, +; Grasslands National Park, 1; Kindersley, +; Last Mountain Lake WMU, 1; Moose Jaw, 2; Regina, 6; Saskatchewan Landing Provincial Park, 2; Saskatoon, 26.

Table 4 - 2. SPECIES SEEN IN NINE OR FEWER LOCATIONS

SPECIES	*LOCATION AND NUMBERS*
NORTHERN FLICKER (R-S)	Saskatoon, +.
NORTHERN FLICKER (YSxRS)	Saskatoon, 1.
AMERICAN CROW	Coronach, 1; Fort Walsh, 2; Moose Jaw, 1; Moose Mountain, 1; Pike Lake, 1; Regina, 5; Saskatoon, 16; Weyburn, 1.
BROWN CREEPER	Craven, +; Fort Walsh, 2; Kenosee Lake, 1; Saskatoon, +; Swift Current, +.
WINTER WREN	Fort Walsh, 1.
VARIED THRUSH	Waldheim, +.
BROWN THRASHER	Snowden, 1.
RUFOUS-SIDED TOWHEE	Turtle Lake, 1.
CHIPPING SPARROW	Watson, 3.
FIELD SPARROW	Birch Hills, 1.
SONG SPARROW	Crooked Lake, 1; Saskatoon, +.
WHITE-THROATED SPARROW	Love, 1; Whitewood, +.
WHITE-CROWNED SPARROW	Craven, 2.
HARRIS' SPARROW	Bangor, 3; Fort Walsh, 1; Snowden, +.
DARK-EYED JUNCO (ORG)	Regina, 1.
LAPLAND LONGSPUR	Bromhead, 915; Coronach, 24; Govenlock, 22; Moose Mountain, 42; Rockglen, 220; Weyburn, 30.
RED-WINGED BLACKBIRD	Fort Walsh, 1; Regina, 33; Saskatchewan Landing Provincial Park, 1.
WESTERN MEADOWLARK	Coronach, 2; Fort Qu'Appelle, +.
RUSTY BLACKBIRD	Clark's Crossing, 1: Coronach, 1; Estevan, 6; Raymore, +; Yorkton, 6.
BREWER'S BLACKBIRD	Archerwill, 1; Bangor, 1; Estevan, 2.
COMMON GRACKLE	Beauval, 1; Birch Hills, 1; Fort Qu'Appelle, 1; Moose Jaw, 2; Shamrock, 2.
BROWN-HEADED COWBIRD	Saskatoon, 1.
BRAMBLING	MacDowall, +.
GRAY-CROWNED ROSY FINCH	Coronach, 7; Fort Walsh, 3.
PURPLE FINCH	Fort Qu'Appelle, 6; Indian Head, 1; Kenosee Lake, 5; Pike Lake, 1; Prince Albert National Park, 10; Round Lake, 2; Saskatoon, 2; Swift Current, 18; Watson, 4.
RED CROSSBILL	Cypress Hills Provincial Park, 3; Fort Walsh, 47; Squaw Rapids, 10.
WHITE-WINGED CROSSBILL	Beauval, 10; Candle Lake, 3; Fort Walsh, 3; Indian Head, 4; Raymore, +; Saskatoon, 10; Squaw Rapids, 19.
AMERICAN GOLDFINCH	Craven, 10; Estevan, 4; Regina, 4; Yorkton, 1.

Table 5. BIRDS NOT IDENTIFIED TO SPECIES

SPECIES	*LOCATION AND NUMBERS*
SMALL ACCIPITER species	Saskatoon, 1.
BUTEO species	Fort Walsh, 2; Qu'Appelle Valley Dam, 2; Shamrock, 1.
EAGLE species	Saskatoon, 1.
WOODPECKER species	Prince Albert National Park, 1; Squaw Rapids, 5.
BLACKBIRD species	Biggar, 1.
CARPODACUS species	Govenlock, 1.
CROSSBILL species	Squaw Rapids, 7.
REDPOLL species	Biggar, 50; Bromhead, 8; Fort Walsh, 3; Gardiner Dam, 80; Govenlock, 3; Prince Albert National Park, 11; Squaw Rapids, 31.

Table 6: NEW AND TYING 1999 HIGH COUNTS (new highs in bold italics)

LOCATION	1999 COUNT	SPECIES	PREV. HIGH	LOCATION (YEAR)
Coronach	1	WESTERN GREBE	1	N. to Gardiner Dam
Gardiner Dam	1	DOUBLE-CREST CORMORANT	1	N. to Squaw Rapids
Weyburn	***4***	***SNOW GOOSE***	***3***	***Coronach 97***
Gardiner Dam	***15***	***REDHEAD***	***8***	***Regina 69***
Pike Lake	1	COOPER'S HAWK	1	N. to Kamsack
Fort Walsh	1	HARLAN'S HAWK	1	N. to White Bear
Leader	***1***	***FERRUGINOUS HAWK***	***New***	
Regina, Weyburn	***2***	***EURASIAN COLLARED-DOVE***	***New***	
Snowden	1	BOREAL OWL	1	S. to Broadview
Saskatoon	***26***	***NORTHERN FLICKER (Y-S)***	***25***	***Saskatoon 95***
Fort Walsh	***1***	***WINTER WREN***	***New***	
Snowden	1	BROWN THRASHER	1	Saskatoon 60
Turtle Lake	1	RUFOUS-SIDED TOWHEE	1	N. to Leader
Watson	***3***	***CHIPPING SPARROW***	***2***	***Swift Current 93***
Birch Hills	1	FIELD SPARROW	1	Saskatoon CP 85
Craven	***2***	***WHITE-CROWNED SPARROW***	***1***	***N. to Saskatoon***
MacDowall	***CP***	***BRAMBLING***	***New***	
Saskatoon	***247***	***HOUSE FINCH***	***190***	***Regina 98***
Craven	***10***	***AMERICAN GOLDFINCH***	***9***	***Kenosee Lake 98***

Table 7: POPULATION STATUS OF SELECTED SPECIES (birds/hour effort)

SPECIES	1999 vs 1998	1999 vs last decade	*SPECIES*	1999 vs 1998	1999 vs last decade
CANADA GOOSE	273	80	COMMON RAVEN	-13	28
MALLARD	58	136	BLACK-CAPPED CHICKADEE	-20	9
COMMON GOLDENEYE	19	5	BOREAL CHICKADEE	-3	25
BALD EAGLE	55	27	RED-BREASTED NUTHATCH	107	57
NORTHERN GOSHAWK	-2	-26	WHITE-BREAST NUTHATCH	-17	2
GOLDEN EAGLE	9	-16	BROWN CREEPER	-68	-55
MERLIN	-45	-26	GOLDEN-CROWNED KINGLET	77	65
PRAIRIE FALCON	70	44	AMERICAN ROBIN	128	-19
GRAY PARTRIDGE	-35	-47	BOHEMIAN WAXWING	-80	-59
RING-NECKED PHEASANT	-62	-57	CEDAR WAXWING	198	-51
SPRUCE GROUSE	155	191	NORTHERN SHRIKE	1	-27
RUFFED GROUSE	-14	8	EUROPEAN STARLING	41	53
SHARP-TAILED GROUSE	2	-6	AMERICAN TREE SPARROW	63	125
ROCK DOVE	1	0	DARK-EYED JUNCO	43	48
GREAT HORNED OWL	-13	-25	LAPLAND LONGSPUR	-31	-30
SNOWY OWL	0	-33	SNOW BUNTING	-32	-11
SHORT-EARED OWL	3	11	RUSTY BLACKBIRD	-8	-58
DOWNY WOODDPECKER	-19	5	PINE GROSBEAK	-33	-47
HAIRY WOODPECKER	-21	1	HOUSE FINCH	-7	283
THREE-TOE WOODPECKER	-57	-55	RED CROSSBILL	-68	-27
NORTHERN FLICKER	4	18	WHITE-WINGED CROSSBILL	-3	-86
PILEATED WOODPECKER	48	43	COMMON REDPOLL	322	316
HORNED LARK	-72	-53	HOARY REDPOLL	233	149
GRAY JAY	-7	3	PINE SISKIN	-40	51
BLUE JAY	-45	-24	EVENING GROSBEAK	142	18
BLACK-BILLED MAGPIE	-17	18	HOUSE SPARROW	-25	-7

BIRD SIGHTINGS IN NORTHERN SASKATCHEWAN, AUGUST 1986

F. J. HARTLEY FREDEEN, 410 Leslie Avenue, Saskatoon SK S7H 2Z1

On reading the interesting reports by Nero and Renaud, I realized I might be able to add a few useful observations about 26 species of birds in northeastern Saskatchewan.[1,2]

On August 10 to 29 inclusive, 1986, my brother Howard, his son Greg, and I canoed down Wollaston Lake, the Fond du Lac River and the eastern arm of Lake Athabasca. We camped for two nights on the west bank of the MacFarlane River on the south side of Lake Athabasca before crossing the lake to Black Bay to meet a DeHaviland Beaver for the return trip to Wollaston Lake with our canoe.

Our trip was, unfortunately, limited in time, and much of that time was spent navigating rapids and lakes (Wollaston, Hatchet, Black and Athabasca, to name the largest). We used a 4 HP side-mounted outboard motor on these lakes. We experienced rain and sometimes high winds almost every day, so camp preparations were more elaborate than expected. Westerly winds on August 23 to 25 were severe enough to sink a string of supply barges on Lake Athabasca and raise the water level at Stony Rapids about 5 m, causing havoc with wharves, boats and pontoon planes. The dates and locations of our encampments are listed in Table 1 and were used as reference points for our observations. Thus, where dates but not locations are cited in the text, refer to appropriate dates in Table 1. For example, we camped at the southwest end of Wollaston Lake on the night of August 10-11, and camped at the northwest corner on the night of August 11-12. Thus, August 11 was spent travelling between these two camps of which the coordinates are listed in Table 1.

COMMON LOON - Loons were heard calling at several locations near the northwest corner of Wollaston Lake on August 11.

TUNDRA SWAN - On August 19, a flock of 16 flew over our campsite near the middle of the south side of Black Lake.

CANADA GOOSE - On August 16, a flock of 16 flightless Canada Geese was seen just down stream from Manitou Falls. Three small groups were seen on August 17 and 18.

MALLARD - On August 22, a small flock flew overhead.

RED-BREASTED MERGANSER - We came to call them "pilot birds" because, on small lakes, August 11 to 17, a family group often would swim parallel to our canoe, always keeping slightly ahead but off to one side, as if determined to beat us to the outlet. Even though we had detailed maps, hidden lake outlets always were a challenge to find. Two indicators that helped us to locate outlets accurately were our "pilot birds" and, in shallower sections, the subtle deflection of water "weeds" toward the outlet.

NORTHERN GOSHAWK - On August 22, about midday, a single Goshawk was seen.

ROUGH-LEGGED HAWK - On August 16, a single one was seen overhead.



Fig. 1. Golden Eagle nest (arrow), Fond du Lac River ***F. J. H. Fredeen***

GOLDEN EAGLE - On August 16, we were surprised to find a small family of Golden Eagles near their nest on a cliff on the north side of the Fond du Lac River, between Manitou Falls and Brink Rapids (Fig. 1). This nest apparently was near or at the same location as that reported by Tyrrell in 1896.[1]

BALD EAGLE - On August 12 to 16, we observed Bald Eagles near their nests every 7 to 8 km along the Fond du Lac River between Kosdaw and Black lakes. On August 21, 5 more families near their nests were observed along the north side of the east arm of Lake Athabasca.

OSPREY - On August 18, we observed one fishing along the south shore of Black Lake.

SEMIPALMATED PLOVER - On August 19, four flew onto the beach near our camp on Black Lake. On August 24, three more were seen near our campsite on the MacFarlane River.

GREATER YELLOWLEGS - On August 22 and 23, several pairs and small flocks were observed along the southeast shore of Lake Athabasca from Poplar Point south into the estuary of the MacFarlane River.

PARASITIC JAEGER - On August 22, two were seen flying along the north shore of the east arm of Lake Athabasca.

HERRING GULL - On August 22, several were seen along the east arm of Lake Athabasca.

TERN (presumed Arctic Tern) - Seen August 11 at the northwest end of Wollaston Lake, and on August 23, along the southwest shore of Lake Athabasca.

GREAT HORNED OWL - On August 22, one was seen about 20 miles west of the village of Fond du Lac.

BOREAL OWL - In the MacFarlane River valley, during the evenings just

after sundown, on August 22 and 23, a Boreal Owl watched us from its perch on the top of a three-metre spruce tree a short distance from our tent. After calling for about 30 minutes, it would fly directly over us, apparently curious about our attempts to mimic it.

COMMON NIGHTHAWK - Between August 16 and 22, one or two were seen or heard every evening, flying overhead.

BELTED KINGFISHER - On August 17, single individuals were seen in two locations between Hawk Rock and Perch Rapids. On August 22, another was seen about 16 km west of Fond du Lac village.

NORTHERN FLICKER - On August 22, one was seen near the MacFarlane River and another in the sand dune area 1 km or so west of our camp site.

PILEATED WOODPECKER - On August 22, one was observed near the MacFarlane River.

CLIFF SWALLOW - On August 15, a large mixed flock of Barn and Cliff swallows was observed flying in and out of a red sandstone canyon below Red Bank Falls, so were presumed to be nesting together (Fig. 2).

BARN SWALLOW - (see Cliff Swallow, above).

COMMON RAVEN - Single ravens were seen on August 17 (between Hawk Rock and Perch Rapids) and on August 24 (Poplar Point on the east shore of Lake Athabasca). On August 23, a pair was seen near the MacFarlane River.

BOREAL CHICKADEE - On August 17, two were seen below Perch Rapids.

RUSTY BLACKBIRD - On August 17, a single blackbird was seen between Hawk Rock and Perch Rapids.

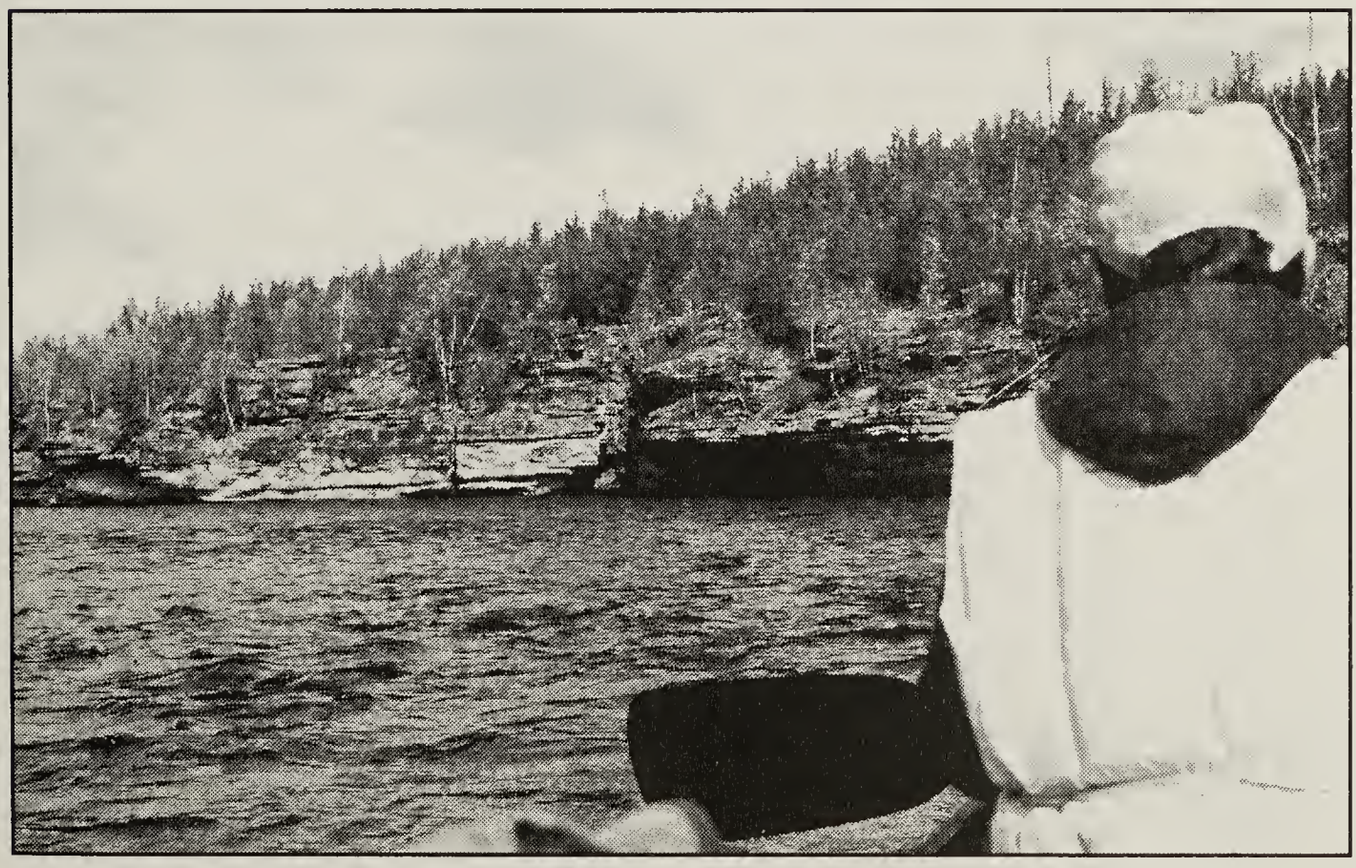


Fig. 2. Sandstone canyon below Red Bank Falls ***F. J. H. Fredeen***

Acknowledgements:

I am much indebted to Howard and Greg (my companions on numerous wilderness trips over a period of 28 years) for their skilful piloting in rapids and in the difficult crossing of Lake Athabasca on August 24, but especially for their collaboration in identifying the 26 species of birds recorded herein.

1. Nero, R.W. 1963. Birds of the Lake Athabasca Region, Saskatchewan. Special Publication No. 5, Saskatchewan Natural History Society, Regina.

2. Renaud, W.E. 1998. Bird observations from northern Saskatchewan, August 1973. *Blue Jay* 56: 210-206.

Table 1. Locations of Overnight Campsites, August 1986.

Camp	Date (August, 1986)	Location	Latitude (N) Deg.	Min.	Longitude (W) Deg.	Min.
1	10-11	S end of Wollaston Lake	58	05	103	47
2	11-12	Head of Fond du Lac River	58	28	103	03
3	12-13	Below Cascade Rapids	58	43	103	54
4	13-14	Waterfound River	58	48	104	02
5	14-15	SW end of Kosdaw Lake	58	56	104	04
6	15-16	Manitou Falls	59	01	104	27
7	16-17	Above Hawk Rock Rapids	59	01	105	03
8	17-18	Below Perch Rapids	59	10	104	46
9-10	18-20	S shore of Black Lake	59	09	105	14
11	20-21	2 km w of Stony Rapids	59	16	105	53
12	21-22	Fond du Lac Village	59	19	107	11
13-14	22-24	MacFarlane River	59	11	107	57
15	24-25	S of Poplar Point	59	18	107	49
16	25-26	N shore L. Athabasca	59	23	107	50
17	26-27	Crackingstone Point	59	24	108	57
18-19	27-29	NE end of Black Bay	59	29	108	46



"Of an estimated 75,000 edible plants found in nature, only 2,500 have ever been eaten with regularity, a mere 150 enter world commerce and a scant 20, mostly domesticated cereals, stand between human society and starvation."

Wade Davis, *The Clouded Leopard,* p. 131

ALCOHOL INTOXICATION CONTRIBUTING TO MORTALITY IN BOHEMIAN WAXWINGS AND A PINE GROSBEAK

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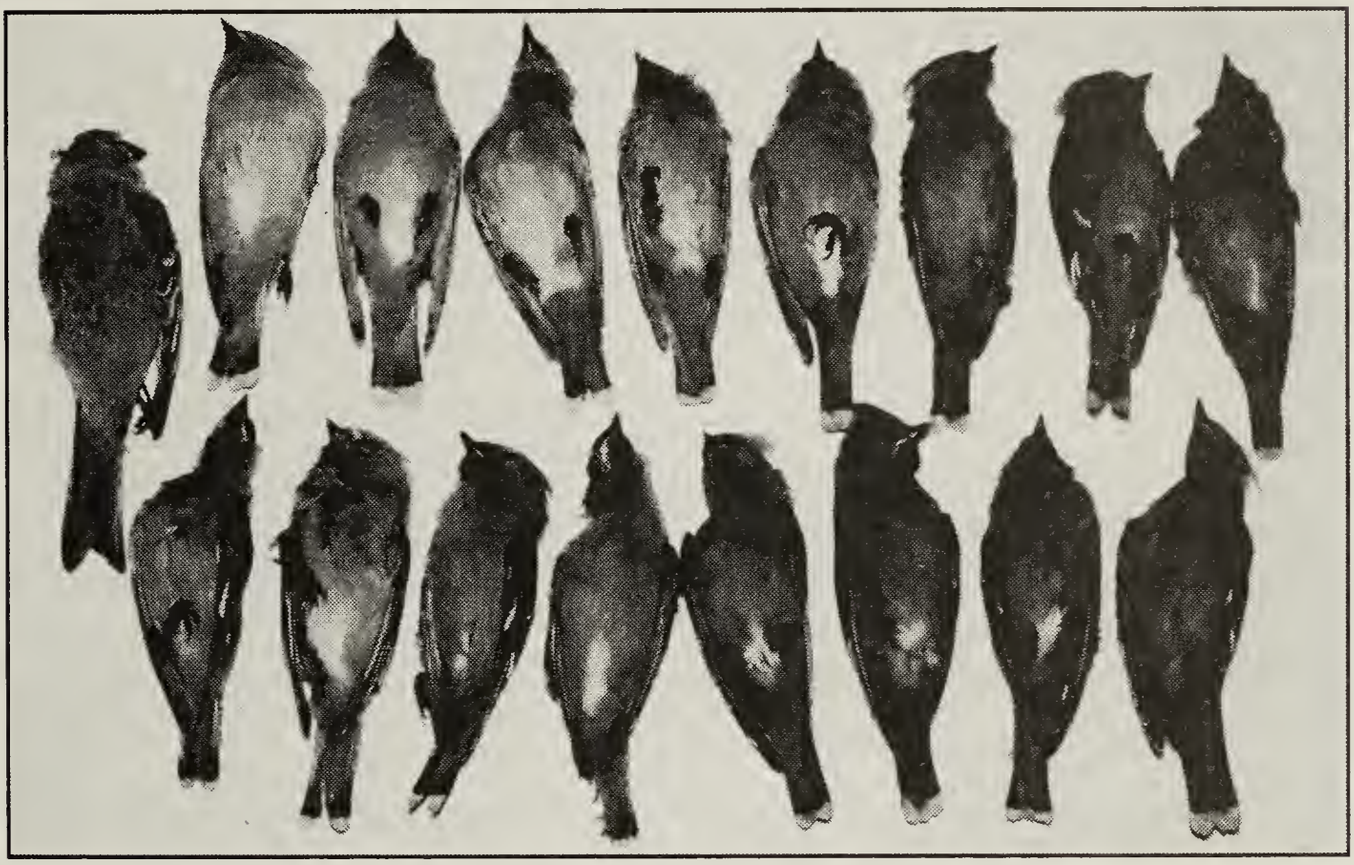


Fig. 1. 16 Bohemian Waxwings and 1 Pine Grosbeak, March 1974
W. J. Walley

On 23 and 24 March 1974, 16 Bohemian Waxwings and one immature male Pine Grosbeak (Fig. 1), were collected from the snow beneath the north-facing wall of the south wing of the Dauphin General Hospital. The birds had flown from a crab apple tree, 7.5 m north of the wing and 3 m east of the main building. This tree had a heavy crop of apples still hanging from the previous summer; because of warm weather, the odour emitted from these apples was strongly suggestive of fermentation.

According to the hospital patients, who heard and saw the birds crash into the windows and the intervening blue wall, most of the collisions had occurred in late morning and early afternoon. Blood on the windows and wall indicated where several birds had hit. Thirteen waxwings and the grosbeak were collected 23 March. Blinds were pulled over the windows, but another three waxwings perished similarly during the late afternoon of 24 March. No subsequent mortalities were detected, but by then most of the crab apples had been eaten or knocked from the tree.

Knowing that fermenting fruit can produce ethyl alcohol, we attempted to

establish whether or not the birds were intoxicated.

Methods:

1. Gizzards were examined and the mash they contained was analysed for alcohol content.

2. Blood was extracted from each bird's heart with a clean syringe. Although only a few drops were obtained from each bird, the accumulated volume from all 17 birds totalled about 2 ml. This was sufficient for blood alcohol analysis performed by gas chromatography using the Poropak - Q - Column described by Kaufman (1973).[3]

3. A necropsy was performed on each bird.

Results:

1. Gizzards contained crab apple pulp, skin and core. Gizzard mash contained 3.1 g alcohol /100 ml mash. The grosbeak gizzard contained sunflower seeds and considerable grit in addition to crab apple pulp.

2. The merged blood alcohol level was 73mg/100 ml. The pooled specimen from our 17 birds does not allow us to know blood alcohol levels of individual birds, nor the range of variation among individuals.

3. The necropsy examinations showed internal haemorrhage in all birds except one waxwing. The breasts had sustained the major impact, forcing the rib cage against the heart and rupturing major blood vessels. Massive clots were found around the major vessels as they entered or left the heart, and in the trachea. Therefore death was attributed to internal hemorrhage and /or asphyxia.

Discussion:

In humans, the clinical signs of alcohol intoxication are unusual when blood alcohol levels are below 50 mg per 100 ml. On the other hand, operating a motor vehicle with blood alcohol in excess of 80 mg/100 ml is illegal and can be an indictable offense.

Ours may be the only study that has attempted to measure blood alcohol levels in inebriated birds and to correlate them with aberrant coordination and flight performance. There have been two recent studies on the subject. Fitzgerald et al. studied two Cedar Waxwings that fell to the ground after ingestion of fermented hawthorn berries; their crop contents measured 380 ppm and their livers, 238 and 989 ppm of alcohol.[2] (Levels from this study in ppm are : crab apple mash, 31,000 ppm, and merged blood alcohol level, 730 ppm)

John V. Dennis listed 19 plant species said to cause apparent inebriation of birds.[1] Mainly from newspapers, correspondence and word of mouth, he gleaned close to 30 instances of American Robin drunkenness; Cedar and Bohemian waxwings were "not far behind". He also mentions that waxwings are more prone to fly into windows when intoxicated.

It seems reasonable to speculate that ingestion of fermented crab apples and the resulting blood alcohol levels contributed to the aberrant behaviour and death of some or all of our waxwings. With a mean blood level of 73 mg/100 ml, one would expect that some individual waxwings had a blood level over 100 mg/100 ml.

In the 25 subsequent years, we have not been aware of further waxwing mortality near Dauphin, nor have we seen a recurrence of climatic conditions conducive to production of fermentation.



Bohemian Waxwing and crab apples ***Ian Wilkie***

Acknowledgements:

The authors herewith express gratitude to Stuart Houston and Robert Nero for reviewing the manuscript and offering constructive advice. We also thank David R.M. Hatch for his literature search and constructive comments. Gail White and Lloyd P. McCabe assisted in the alcohol determination.

1. Dennis, J. V. 1987. If you drink, don't fly: fermented fruit and sap can inebriate birds! *Birder's World* 1:15-19.

2. Fitzgerald, S. D., J. M. Sullivan, and R. J. Everson. 1990. Suspected ethanol toxicosis in two wild Cedar Waxwings. *Avian Diseases* 34:488-490.

3. Kaufman, J. H. 1973. A rapid screening procedure for drug and alcohol analysis in serum. *American Journal of Medical Technology* 39:338.

"Some of the days I've spent alone in the depths of the wilderness have shown me that immortal life beyond the grave is not essential to perfection, for these diverse days were so complete that there was no sense of time in them, they had no definite beginning or ending and formed a kind of terrestrial immortality."

John Muir, *In Nature's Heart : Wilderness Days of John Muir.*

GOLDEN EAGLE UNSUCCESSFULLY ATTACKS PRONGHORN FAWN

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The Golden Eagle is known to prey on a variety of larger mammals, including adult and young Pronghorns.[1,2,3,4] The following observation is of an unsuccessful attack by an immature Golden Eagle on a young Pronghorn fawn.

On the afternoon of 4 June 1995, I was traveling in my truck along a prairie trail through native mixed grass prairie rangeland approximately 15 km northwest of Bow City, Alberta. This area, on the western end of Ducks Unlimited Canada's Medicine Wheel project, consists of undulating terrain located on a plateau south and east of the Bow River. Over a period of about two hours I frequently observed one or more immature Golden Eagles circling overhead. I also encountered a number of lone Pronghorn does and two does with fawns.

One lone doe was standing at the edge of an ephemeral wetland in a small depression roughly 30 m x 30 m in size. The wetland, dry at this time of year, supported taller grass than the surrounding prairie. The doe was about 60 m from the trail and I stopped briefly to watch her. She seemed little bothered by my presence and stayed in place while I drove off. She was lost from sight when I drove around a nearby hill.

I proceeded down the dirt trail for approximately ten minutes when I came to a dead end and headed back on the trail towards the Pronghorn. As I approached the hill, I saw an immature eagle diving towards the ground near where I had observed the doe. The hill blocked my view of the eagle's attack, but when I made my way around the hill, I saw the eagle sitting in the short grass upland about 20 m from the doe.

As I rounded the corner, the doe charged the eagle with her head down. This sent the eagle into flight. It rose about 30 m into the air and then dove into the taller grass in the depression behind the Pronghorn. The doe then turned around and began to walk towards, but not charge the eagle. Her approach sent the eagle into flight, but again it only rose only about 30 m into the air before making another dive into the taller grass. The doe again slowly approached the eagle, sending it aloft to about the same height. It dove into the tall grass again, only to take flight following another approach from the doe.

After this third flight from the tall grass, the eagle remained overhead for several minutes. During this time, a young fawn got up from the tall grass and walked toward the doe, who was standing on the short grass upland. After the fawn joined the female, the eagle landed on the shorter prairie about 15 m from the Pronghorns. It stood there for a couple of minutes before the doe, with the fawn at her side, slowly walked toward the eagle. This action prompted the eagle to take flight, this time leaving the area. I watched the mother and fawn for about half an hour after that. They remained in the area during the entire period and no more attacks from the eagle were observed.

1. Beale, D. M. and A. D. Smith. 1973. Mortality of Pronghorn Antelope fawns in western Utah. *Journal of Wildlife Management* 37:343-352.

2. Bent, A. C. 1961. Life Histories of North American Birds of Prey, Part One. Reprinted from Smithsonian Institution, United States National Museum Bulletin 167, 1937. Dover Publishing Inc., New York.

3. Bruns, E. H. 1970. Winter predation of Golden Eagles and Coyotes on Pronghorn Antelopes. *Canadian Field Naturalist* 84:301-304.

4. Lehti, R. W. 1947. The Golden Eagle attacking Antelope. *Journal of Wildlife Management* 11:348-349.



Golden Eagle ***Wayne Lynch***

"A Yellow-billed Magpie's nest that Verbeek (1973) dismantled, consisted of 1573 sticks and weighed 11 kg, some 70 times the weight of the bird. The only comparable information for Black-billed Magpies comes from a single nest examined by Anders Moller (pers. comm.) in Denmark. This nest consisted of 598 sticks, weighed 4.6 kg, and measured 44 x 38 x 70 cm high."

T. R. Birkhead, *The Magpies* p.141

MAMMALS

SASKATCHEWAN CHRISTMAS MAMMAL COUNT - 1999

Compiled by Wayne C. Harris, Saskatchewan Environment and Resource Management, 350 Cheadle Street West, Swift Current, SK S9H 4G3

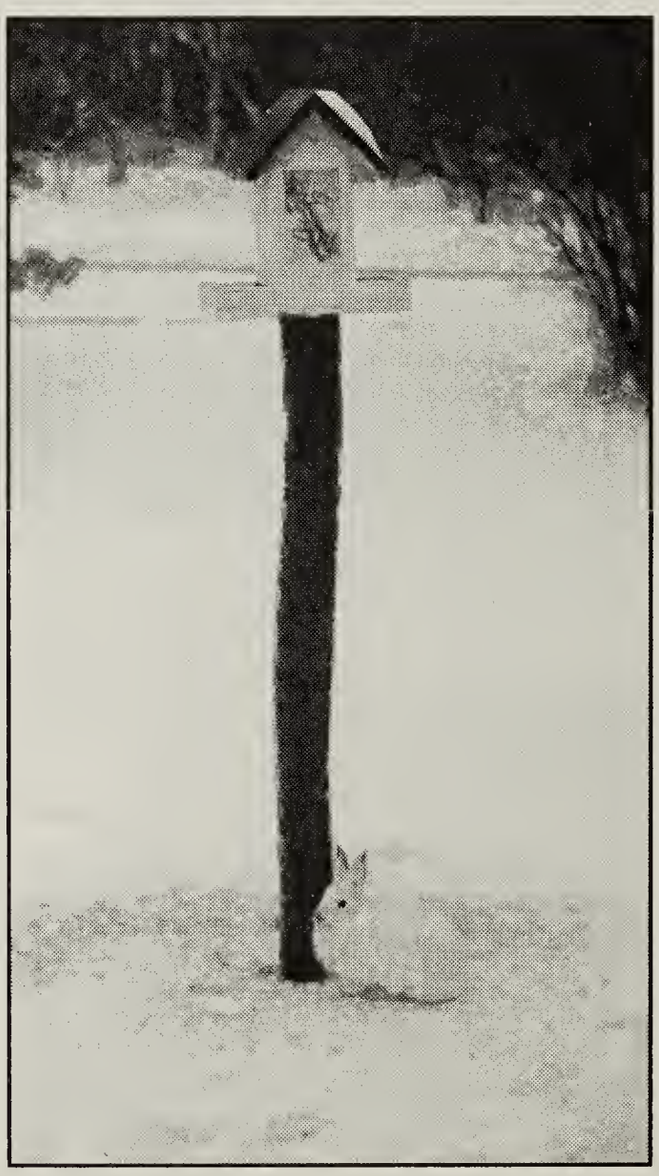
The number of mammal counts received this year is 94, two less than in 1997, but seven more than received last year. The number of species reported was 37, two less than both 1998 and 1997. The average number of species per count was 7.2, the same as last year, which is below the long-term average.

The weather was mild and windy. Much of the south experienced snow-free conditions while further north the little snow cover present was crusted, making track identification difficult as evidenced by the low number of species and even one count reporting zero species.

No new species were reported this year. The Short-tailed Shrew at Fort Qu'Appelle was the only rarity. Population trends followed the pattern of previous years with the exception of White-tailed Deer whose numbers appeared to be below long term averages.

For weather, coverage and participants please refer to the Christmas Bird Count found elsewhere in this issue. In the tables, a numeral alone shows that the mammals were seen, while a letter following the number means that the number was inferred by the means defined below. A letter alone means that the species was present but estimating the numbers was impossible or that no attempt was made to do so. Symbols used in the tables are:

T = tracks
L = active lodge or hut
D = dead animal found
d = fresh diggings found
S = smell or odour
H = heard
0 = present during the count period (December 16 to January 3) but not found on count day.



Snowshoe Hare at feeder - Birch Hills
Don Weidt

Table 1-1: SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

SPECIES / *LOCALITY & DATE*	1.ARCHERWILL December 30, 1999	2.ARMIT December 27, 1999	3.ASSINIBOIA January 03, 2000	4.AVONLEA January 02, 2000	5.BANGOR December 17, 1999	7.BIGGAR December 27, 1999	8.BIG RIVER January 02, 2000	9.BIRCH HILLS December 20, 1999	10.BODMIN December 24, 1999	11.BROADVIEW December 26, 1999	12.BROMHEAD January 02, 2000
SHORT-TAILED SHREW											
MASKED SHREW											
SHREW species					2						
EASTERN COTTONTAIL											
NUTTALL'S COTTONTAIL											
SNOWSHOE HARE	2	2T			14	1T		2+24T	T	2T	
WHITE-T. JACKRABBIT	1		11	10T							1D
RICH. GND. SQUIRREL											
GREY SQUIRREL	5										
FOX SQUIRREL										2	
RED SQUIRREL		2			0		1	1+1T	3		
N. FLYING SQUIRREL											
SQUIRREL species											
BEAVER		2L									
DEER MOUSE				0	12						
GAP. RED-BACKED VOLE											
MUSKRAT		7L		40L							
MEADOW VOLE					6						
VOLE species						4T		1T			1
MOUSE species								2T	T	2T	
NORWAY RAT					1						
HOUSE MOUSE					2						
PORCUPINE	2	2T	6		1T						
COYOTE	3	1	9	1	5H	2T	T	2+6T	T		2T
WOLF	1	1T									
RED FOX	1			0		1T	T	1T			3T
SWIFT FOX											
RACOON											
ERMINE								3T			
LONG-TAILED WEASEL								1T		1T	
LEAST WEASEL								1T			
WEASEL species		1T							1		
MINK										1T	
BADGER								1T			
STRIPED SKUNK			3								
RIVER OTTER											
MULE DEER			20			1					
WHITE-TAILED DEER	3	3+50T	22	20	9	40T	T	1+2T	T	4T	6
DEER species											
MOOSE	3	5T	1								
ELK		10T									
PRONGHORN			2								
TOTAL SPECIES	9	11	8	6	10	6	4	11	6	6	5

Table 1-2: SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

13.CABRI December 25. 1999	14.CANDLE LAKE December 30. 1999	15.CLARK'S CROSS December 18. 1999	16.COCHIN December 27. 1999	17.CORONACH December 22. 1999	18.CRAVEN December 18. 1999	19.CROOKED LAKE December 18. 1999	20.CROOKED R. December 30. 1999	21.CYPRESS HILLS December 30. 1999	22.DUCK LAKE December 19. 1999	23.EASTEND December 27. 1999	*LOCALITY & DATE* *SPECIES*
											SHORT-TAILED SHREW
											MASKED SHREW
						T					SHREW species
											EASTERN COTTONTAIL
				5T						1T	NUTTALL'S COTTONTAIL
	8T	20T	2+2T		2T	1					SNOWSHOE HARE
3T		1+1T	1	2	20T						WHITE-T. JACKRABBIT
				1						0	RICH. GND. SQUIRREL
					4						GREY SQUIRREL
					5						FOX SQUIRREL
	3+9T	1T	1		1T	5		28			RED SQUIRREL
											N. FLYING SQUIRREL
											SQUIRREL species
					2	1L				L2	BEAVER
			10T	2		T				2T	DEER MOUSE
											GAP. RED-BACKED VOLE
		1T		1	3	1				5L	MUSKRAT
				3	2	T		1		1T	MEADOW VOLE
		2+2T			2T						VOLE species
	2T	3T		2T	17T						MOUSE species
											NORWAY RAT
											HOUSE MOUSE
		2	1T	3	1						PORCUPINE
3T	1+2T	3	3+3T	6	4	2	0	6		2	COYOTE
										0	WOLF
1		1T	1+2T	1+2T	2T	T				1T	RED FOX
											SWIFT FOX
										0	RACOON
											ERMINE
				1T	T						LONG-TAILED WEASEL
					1T						LEAST WEASEL
		1		1T							WEASEL species
					1	3					MINK
				1d							BADGER
1S		1S	1S	2S							STRIPED SKUNK
											RIVER OTTER
18			4	92				18		19	MULE DEER
	1+10T	8	4+15T	36	16	T	1T	46		4	WHITE-TAILED DEER
		7T			10T						DEER species
	1T							4			MOOSE
										0	ELK
				32						0	PRONGHORN
5	6	12	10	15	17	11	2	6	0	14	TOTAL SPECIES

Table 1-3: SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

SPECIES / *LOCALITY & DATE*	24.EMMA LAKE January 01, 2000	25.ESTEVAN December 23, 1999	26.ESTUARY December 31, 1999	27.FENTON December 18, 1999	28.FERLAND December 30, 1999	29.FIFE LAKE December 28, 1999	30.FT. QU'APPELLE December 18, 1999	31.FORT WALSH December 18, 1999	32.GARDINER DAM December 20, 1999	33.GOOD SPIRIT December 29, 1999	34.GOVENLOCK December 19, 1999
SHORT-TAILED SHREW							0				
MASKED SHREW											
SHREW species				2T							
EASTERN COTTONTAIL		5T									
NUTTALL'S COTTONTAIL			1					6T	4		1
SNOWSHOE HARE	0	2T		9T			1		1T		
WHITE-T. JACKRABBIT									4+2T	1T	
RICH. GND. SQUIRREL								1			
GREY SQUIRREL											
FOX SQUIRREL		3									
RED SQUIRREL	5			1H+3			10	7+2T		1T	
N. FLYING SQUIRREL	0										
SQUIRREL species											
BEAVER		2L		1L						1L	
DEER MOUSE		1T					2	3T			
GAP. RED-BACKED VOLE							2				
MUSKRAT		7L				2	2		12L	9L	
MEADOW VOLE		1D						5	1		
VOLE species								1T	2T	1T	
MOUSE species				7T					1T		
NORWAY RAT											
HOUSE MOUSE							0				
PORCUPINE			1				0	2T	4T	3T	3T
COYOTE		3T	3	2+7T	4H		0	4	11	3	6
WOLF											
RED FOX		1T					0		1+1T		
SWIFT FOX											2T
RACOON							0				
ERMINE											
LONG-TAILED WEASEL				2T							
LEAST WEASEL											
WEASEL species		1T									
MINK		1T					1				
BADGER											1d
STRIPED SKUNK											
RIVER OTTER											
MULE DEER			1				0	15	141		146
WHITE-TAILED DEER		10T	19	10T			0	44	29	7	25
DEER species											
MOOSE										1T	
ELK								1			
PRONGHORN								18			482
TOTAL SPECIES	3	12	5	8	1	1	14	12	11	9	8

Table 1-4: SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

35.GRASSLAND NP December 17, 1999	36.GRAYSON December 23, 1999	37.HARRIS January 03, 2000	39.HOLBIEN December 31, 1999	40.INDIAN HEAD December 27, 1999	41.KAMSACK December 26, 1999	42.KELVINGTON December 28, 1999	43.KENASTON December 23, 1999	44.KENNEDY December 30, 1999	45.KENOSEE LAKE December 28, 1999	46.KILWINNING December 22, 1999	*LOCALITY & DATE* *SPECIES*
											SHORT-TAILED SHREW
											MASKED SHREW
							12T				SHREW species
											EASTERN COTTONTAIL
1											NUTTALL'S COTTONTAIL
		6T		2		10T	T	1T		T	SNOWSHOE HARE
	1T	8T	3	3			T				WHITE-T. JACKRABBIT
											RICH. GND. SQUIRREL
											GREY SQUIRREL
											FOX SQUIRREL
	1			21					5+3H	5	RED SQUIRREL
											N. FLYING SQUIRREL
											SQUIRREL species
	1							2L	16L		BEAVER
							T				DEER MOUSE
											GAP. RED-BACKED VOLE
								29L	37L		MUSKRAT
	3						T				MEADOW VOLE
		3T									VOLE species
	2T		1								MOUSE species
											NORWAY RAT
											HOUSE MOUSE
				1	1	1T					PORCUPINE
2	2T	7		13	1H	2	12T	3T	1+2H	1	COYOTE
											WOLF
	1	4T		1			12T				RED FOX
											SWIFT FOX
							T	1T			RACOON
											ERMINE
			T				T				LONG-TAILED WEASEL
											LEAST WEASEL
	2T										WEASEL species
	3						T				MINK
							T			1d	BADGER
		1S			2		T				STRIPED SKUNK
											RIVER OTTER
11		44					T				MULE DEER
56	1	34		13	72	20T	T	2	26		WHITE-TAILED DEER
											DEER species
					2						MOOSE
					T						ELK
126											PRONGHORN
5	10	8	3	7	6	4	14	6	5	4	TOTAL SPECIES

Table 1-5: SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

SPECIES / *LOCALITY & DATE*	47.KINDERSLEY December 27, 1999	48.KINLOCH December 18, 1999	49.KUTAWAGAN L. December 24, 1999	50.LAIRD December 28, 1999	51.LAST MTN. L. December 26, 1999	52.LEADER (N) December 27, 1999	53.LEADER (S) December 18, 1999	55.LOVE December 24, 1999	56.LUSELAND December 26, 1999	57.MACDOWALL December 25, 1999
SHORT-TAILED SHREW										
MASKED SHREW										
SHREW species										2T
EASTERN COTTONTAIL										
NUTTALL'S COTTONTAIL						2	1			
SNOWSHOE HARE		1	2T	T				0		2T
WHITE-T. JACKRABBIT			30T		5T	2			0	1T
RICH. GND. SQUIRREL										
GREY SQUIRREL										
FOX SQUIRREL										
RED SQUIRREL		5T						10		2
N. FLYING SQUIRREL								0		
SQUIRREL species										
BEAVER		2L				1				L
DEER MOUSE									1	
GAP. RED-BACKED VOLE										
MUSKRAT		6L	1+30L		1					L
MEADOW VOLE		10T	1T							
VOLE species										2T
MOUSE species						2				2T
NORWAY RAT										
HOUSE MOUSE										
PORCUPINE			3T		3T				0	1T
COYOTE		4T	7	T	2	9		0	1	10T
WOLF										
RED FOX			1T					0	0	1+10T
SWIFT FOX										
RACOON		2T								1T
ERMINE										
LONG-TAILED WEASEL										2T
LEAST WEASEL		2T								1T
WEASEL species			2T						0	
MINK		1T			1T					
BADGER					2d					
STRIPED SKUNK										
RIVER OTTER										
MULE DEER						12	11			
WHITE-TAILED DEER		4T	10T	T	45	4		18	11	20T
DEER species										
MOOSE								0	1	
ELK		7T						0		
PRONGHORN	25									
TOTAL SPECIES	1	11	9	3	7	7	2	8	8	15

Table 1-6: SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

58.MATADOR December 27, 1999	59.MEADOW L., December 26, 1999	60.MELFORT December 26, 1999	61.MELVILLE December 25, 1999	63.MOOSE JAW December 26, 1999	64.MOOSE MTN. December 30, 1999	65.NIPAWIN December 30, 1999	66.NISBET WEST January 01,2000	67.PIKE LAKE January 02, 2000	68 PORCUPINE PLN December 27, 1999	*LOCALITY & DATE* *SPECIES*
										SHORT-TAILED SHREW
										MASKED SHREW
										SHREW species
										EASTERN COTTONTAIL
2										NUTTALL'S
	15T					T	2	1+20T		SNOWSHOE HARE
		0		3				2T		WHITE-T. JACKRABBIT
										RICH. GND. SQUIRREL
										GREY SQUIRREL
				9						FOX SQUIRREL
	3				5	3	5	5	1	RED SQUIRREL
										N. FLYING SQUIRREL
										SQUIRREL species
										BEAVER
										DEER MOUSE
										GAP. RED-BACKED VOLE
										MUSKRAT
										MEADOW VOLE
					1			1T		VOLE species
	4T		1T					4T		MOUSE species
										NORWAY RAT
									1T	HOUSE MOUSE
3			1							PORCUPINE
0	1T	0	0			1		3	1	COYOTE
										WOLF
								1T	0	RED FOX
										SWIFT FOX
									0	RACOON
										ERMINE
										LONG-TAILED WEASEL
										LEAST WEASEL
	1T									WEASEL species
										MINK
										BADGER
										STRIPED SKUNK
										RIVER OTTER
31										MULE DEER
3	2+12T		5				5	14	17T	WHITE-TAILED DEER
								15+7T		DEER species
	2T								3T	MOOSE
29						31			20T	ELK
19										PRONGHORN
7	7	2	4	2	2	4	3	8	8	TOTAL SPECIES

Table 1-7: SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

SPECIES / *LOCALITY & DATE*	69.PREECEVILLE January 01, 2000	70 PADDOCKWOOD December 19, 1999	71.PRINCE ALBERT December 19,1999	72.PR. ALBERT NP December 20, 1999	73.QU'APPELLE DAM December 19, 1999	74.RAYMORE December 25, 1999	75.REGINA December 26, 1999	76.ROCKGLEN December 30, 1999	77 ROUND LAKE December 20, 1999	78 SK. LANDING PP December 21,1999
SHORT-TAILED SHREW										
MASKED SHREW						1				
SHREW species										
EASTERN COTTONTAIL										
NUTTALL'S COTTONTAIL								0		10T
SNOWSHOE HARE			1+3T	3T		20T	25T		4T	
WHITE-T. JACKRABBIT			1+1T		1	10T	20		1T	4T
RICH. GND. SQUIRREL			1							
GREY SQUIRREL	1									
FOX SQUIRREL										
RED SQUIRREL	1		6	3+5T			7		6	
N. FLYING SQUIRREL										
SQUIRREL species							5			
BEAVER						1L			7L	1T
DEER MOUSE						3	79T		10T	
GAP. RED-BACKED VOLE						3				
MUSKRAT						11L	2L			
MEADOW VOLE						13	12T		20T	
VOLE species				4T						
MOUSE species			1T							
NORWAY RAT										
HOUSE MOUSE						10T			2T	
PORCUPINE			2T			7T	1	0	1	2
COYOTE	10H		12+1T		1	3+10T	2T	0	2	3
WOLF										
RED FOX		2	3	1+2T		1T	1		4T	
SWIFT FOX										
RACOON	0							0	1T	
ERMINE										
LONG-TAILED WEASEL			3T			1T				
LEAST WEASEL									1T	1T
WEASEL species						3T	2T			
MINK						1T	2T		1	
BADGER						2d				
STRIPED SKUNK							1D		1	
RIVER OTTER										
MULE DEER								0		61
WHITE-TAILED DEER	8+5T	3	13+10	2	5	13+10	13	41	5	56
DEER species										
MOOSE										
ELK				10T						
PRONGHORN										
TOTAL SPECIES	5	2	10	6	3	16	13	6	15	8

Table 1-8. SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

79.SASK. R. FORKS December 20, 1999	80.SASKATOON December 26, 1999	81.SHAMROCK December 29, 1999	82.SKULL CREEK December 26, 1999	83.SNOWDEN December 27, 1999	84.SOMME December 27, 1999	85.SPALDING December 27, 1999	86.SQUAW RAPIDS December 28, 1999	87.STOCKHOLM December 28, 1999	88.SWIFT CURRENT January 02, 2000	*LOCALITY & DATE* *SPECIES*
										SHORT-TAILED SHREW
										MASKED SHREW
						T				SHREW species
										EASTERN COTTONTAIL
			5						4+1T	NUTTALL'S COTTONTAIL
5T	2+31T			10T	0	5T	6T			SNOWSHOE HARE
	11	2T	4		0		2T	3	2+1T	WHITE-T. JACKRABBIT
		1	1							RICH. GND. SQUIRREL
									20	GREY SQUIRREL
										FOX SQUIRREL
2+2T	4		4	17	6		40			RED SQUIRREL
										N. FLYING SQUIRREL
										SQUIRREL species
	2+1T						3L			BEAVER
	14T	1		30T	1		2T		1T	DEER MOUSE
										GAP. RED-BACKED VOLE
		8L					7L			MUSKRAT
	2T			4T			3T			MEADOW VOLE
						T				VOLE species
		1T				T		1		MOUSE species
										NORWAY RAT
										HOUSE MOUSE
	1T		2			1T	1T	1		PORCUPINE
	10	2+4T	7		0	t	3T	2	5+3T	COYOTE
					0		2T			WOLF
	2	4T	1			4T	2T			RED FOX
										SWIFT FOX
				6T						RACOON
1T										ERMINE
1T			2	0						LONG-TAILED WEASEL
			4							LEAST WEASEL
	1	1T				1T	1T			WEASEL species
			1				1T		2	MINK
		2T+6d						0		BADGER
							1S			STRIPED SKUNK
							1T			RIVER OTTER
			4						45+1T	MULE DEER
12T	43		13		0	6T	18	5	8	WHITE-TAILED DEER
	22T	12T							11	DEER species
					0		2T			MOOSE
							34			ELK
									8	PRONGHORN
5	11	9	12	6	8	9	18	6	9	TOTAL SPECIES

Table 1-9: SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

SPECIES / *LOCALITY & DATE*	89 TISDALE December 24, 1999	90. TOGO December 24, 1999	91. TORCH R. January 02, 2000	92. TURTLE L. December 20, 1999	94. WATSON January 02, 2000	95. WELDON December 19, 1999	96. WEYBURN December 18, 1999	97. WHITE BEAR January 01, 2000	98. WHITEWOOD December 19, 1999	99. YORKTON December 31, 1999	NUMBER OF COUNTS
SHORT-TAILED SHREW											1
MASKED SHREW											1
SHREW species					1T						7
EASTERN COTTONTAIL											1
NUTTALL'S COTTONTAIL											14
SNOWSHOE HARE		1	0			T			9T	1	48
WHITE-T. JACKRABBIT									1	1T	39
RICH. GND. SQUIRREL											6
GREY SQUIRREL											4
FOX SQUIRREL							2				5
RED SQUIRREL			3	4					2	3	44
N. FLYING SQUIRREL		1									3
SQUIRREL species											1
BEAVER										1	19
DEER MOUSE									2T	1T	22
GAP. RED-BACKED VOLE											2
MUSKRAT								0	13L		24
MEADOW VOLE										4T	20
VOLE species									1T		15
MOUSE species										12T	21
NORWAY RAT											1
HOUSE MOUSE									1		6
PORCUPINE				3					2		36
COYOTE			0	7	1T	2		6	2		76
WOLF											5
RED FOX			0						1		39
SWIFT FOX											1
RACOON											11
ERMINE									1		3
LONG-TAILED WEASEL					1T						14
LEAST WEASEL											7
WEASEL species											15
MINK											15
BADGER											9
STRIPED SKUNK									2		12
RIVER OTTER											1
MULE DEER				8				128			24
WHITE-TAILED DEER	8		3	15		T	1	3	5	1	77
DEER species					5T						7
MOOSE				2							14
ELK			60								12
PRONGHORN								0			10
TOTAL SPECIES	1	2	6	6	4	3	2	5	13	7	



Coyote eating Crab Apples at Crooked River **Joyce Mehler**



Northern Hawk-Owl, Moose Jaw, December 26, 1999 ***Leith Knight***

COUGAR, LYNX AND DEER OBSERVATIONS FROM MANITOBA AND BRITISH COLUMBIA BY H. M. LAING

Introduction by ROBERT W. NERO, 546 Coventry Road, Winnipeg, MB R3R 1B6

Richard Mackie's biography of H. M. Laing (1883-1982) provides an abundance of information on the life of this early "hunter-naturalist" and his extensive natural history contributions.[3] I first became acquainted with Mack Laing through studying the birds of Lake Athabasca.[4] Laing had been a member of a U.S. Biological Survey party that conducted field work there in 1920.

After my family and I moved to Manitoba in 1966, I perused with interest Laing's early account of birds in the Oak Lake area of the southwestern part of the province.[1] Later, a further account of Laing's experiences with birds in Manitoba was published by him in Blue Jay.[2] That article, not mentioned in Mackie's book, was written when Laing was 96; it came about through the encouragement of Stuart Houston, who began corresponding with Laing in 1969. Our work on the Cougar in Manitoba led to further correspondence between Laing and myself.[5] Recently, I looked over several letters from Laing that I have treasured and I decided that his comments on Cougars deserved to be published.

What follows is excerpted, and slightly modified, from Mack Laing's lengthy handwritten letter of January 1 1974, sent to me from his home at Comox, BC after I had sent him sketches of possible Cougar tracks.

Laing writes:

And now for the cougar lore. I was very interested in your records of the big cat in Manitoba. We can't forget that he was always there. The Tiger Hills on the southern border of the province were so named back in the days of Henry's journals. In 1904 and '05 that I spent in the Boissevain district [due south of Brandon, MB], I heard nothing of the big cat in Turtle Mountain southward or Souris River northward. But in 1903 at Oak Lake [just west of Brandon, MB], I met David McLeish whose farm was about a mile south of town and he told me of seeing an animal of the cat kind, bigger than a coyote, tawny of colour, that crossed his farm heading for the sandhills southward. It had come from the wooded Assiniboine valley northward.

The lynx at Oak Lake was periodically a very common winter visitor. In 1907, Robert Alford, on five consecutive nights, trapped one, missed the sixth night and clicked again on the 7th. But Alford never reported any evidence of the cougar, perhaps because in pioneer days (he settled in 1885) there were very few deer in the area in the 1880s, and those present were mule deer.

I saw my first white-tailed deer at Oak Lake in1908 in July. He jumped up from the brush in the early dusk as I was in the big Flat Creek ravine. When I saw that big long flag waving at me I thought I must be seeing things. But I knew it, for in the two years (1901-02) I taught at Glenora [80 km southeast of Brandon] on the Rock Lake prairies, I got well acquainted with white-tails in the splendid wooded areas of that region -



Lynx tracks ***Lorne Scott***

extensive forests of oak and lots of browsing areas of shrubbery. In 1951 or '52, a former Oak Lake pupil reported that he had recently seen, in winter on one of the farms on the floor of the Assiniboine valley, as many as 80-odd white-tails in a wintering flock. An abundance of deer like that would mean that the big deer-killing cat was bound to come.

I can't say much about your problem with the tracks from the evidence of your careful diagrams and notes. I am sorry that I did not make photographic studies of both lynx and cougar tracks. I think likely you were following a cougar all right. There is no weight to a lynx. The fact that your cat made prints "fairly deep on a hard-packed road" implies that the beast had some considerable weight. The size of your prints doesn't mean much, though 3½ in. would be about right for an adult female cougar. The appearance of a lynx is mostly a fraud. His deceptive front legs are slender and weak, the toes long and slender. In snow, he spreads his long toes for a snowshoe and leaves the print of a big animal. The length of his jumps while running would vary. On the other hand, the cougar is short-furred and shows his solid build. Big old males run to 150 lbs and even over.

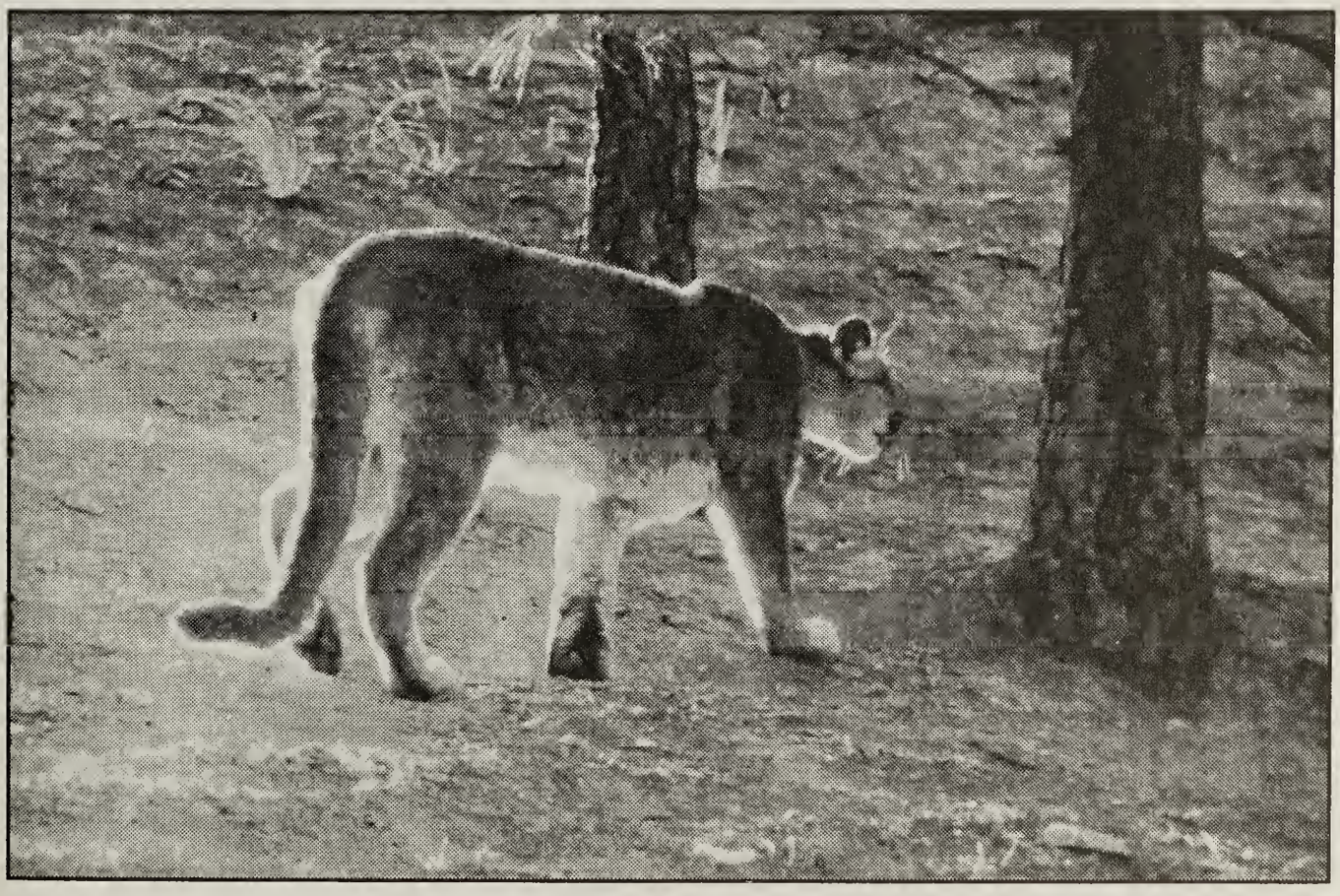
When I first came to Comox [on the eastern shore of Vancouver Island] in 1922, a cougar's track in the neighbourhood was common enough. In 1923, I built my first home at the mouth of Brooklyn Creek. I was surrounded by 30 acres of timber on three sides. One night I came home near midnight carrying my 'bug' (can and a candle) on a dubious trail along the beach. When I was about to step off the home end of my creek foot-bridge plank, I noted 2 of the finest, freshest cougar prints you ever saw melted into the frost on the plank. The cat had noted the new house on his beat and stood on the bridge at midnight to think it over. I thought things over too.

Although the cougar is difficult to see, he can be very brash. One evening in the 1930s, my wife and I were reading at the fireplace, the two springers warming their heads at our feet. I got up to get a new slab of firbark from the woodbox on the veranda. In the light from the door I saw tracks in the frost on the steps, cougar! – a big fellow too – the prints spread widely. He had come up about 6 steps to the floor of the veranda on which there was no frost. He didn't leave by the stairs but jumped over the south railing, ten feet from the ground. Not even the dogs heard a sound. Undoubtedly he went to the woodbox and looked in the window. Maybe the sight of the fire deterred him. But I think I worked it out correctly after a look-see from the lawn. From about 25 yards away, the heads of three mounted bucks: black-tail, white-tail and mule deer, stood out like three splendid bucks looking out through the fireplace wall. What a sight.

I got a lot of my cougar lore from my neighbor, good friend and hunting pal John Cecil "Cougar" Smith who spent most of his life hunting the big cats for bounties. Vancouver Island, I expect, had the heaviest cougar population in America.

Don't hold your breath expecting to see a cougar track with the tail dragging in the snow. They just don't do it. He has great respect for his fine appendage, but I don't know what service it serves his life history. Probably it is a stabilizer and rudder to his flying leaps.

In my 52 years at Comox, only twice have I seen a cougar in the natural, not treed by dogs. Once, when back-packing up the old Holberg trail to Cape Scott, as I rounded a curve I spied the rear of a big animal as it was disappearing in the woods. It was tall and tawny with a black spot, and I said "Ho hum, another black-tail" when, in a flash of intelligence, I realized that no black-tail carried his marker so low and there was no sign of white fringe. I had seen a very big cougar.



Cougar

On my other chance meeting, I was at Upper Campbell Lake, also in summer. I was sitting on a log at right angles to the road in the timber listening for the squeal of black pigeon hawks [Merlins]. Hearing nothing for a while, I stood up and turned to face the road and found myself face to face with a female cougar. She had come on me behind my back. She did an about turn nimbly enough, but not scared at all and went back up the road in that ambling gait that in the open appears awkward – nothing smooth, direct and catlike about it. It reminded me of a western Mule Deer making a break away in the open where there is no brush to bounce over as in Manitoba, and the clown doesn't know whether to trot, walk or pace! – H. M. Laing

1. Laing, H. M. 1913. Out with the Birds. Outing Publ. Co., New York. 249 pp.

2. Laing, H. M. 1980. Early Manitoba bird notes. *Blue Jay* 38: 96-114.

3. Mackie, R. 1985. Hamilton Mack Laing : Hunter-naturalist. Sono Nis Press, Victoria, B.C. 234 pp.

4. Nero, R. W. 1963. Birds of the Lake Athabasca Region, Saskatchewan. Saskatchewan Natural History Society, Special Publication No. 5, Regina. 143 pp.

5. Nero, R. W. and R. E. Wrigley. 1977. Status and habits of the Cougar in Manitoba. *Canadian Field-Naturalist* 91 : 28-40.



White-tailed Deer ***Juhachi Asai***

NOTES AND LETTERS

HOUSE SPARROW - AN UNEXPECTED ALLY

We have more than our normal share of House Sparrows living on our farm, just north of Saskatoon, flocking anywhere around the yard where food presents itself. The House Sparrow, introduced in eastern North America in the 1850s, has adapted very well to conditions here from the wet damp coast to the dry, cold centre. House Sparrows can be found everywhere, but reside mainly where human habitation occurs. To most farmers and birders, the House Sparrow is a pest 90% of the time. I say 90% because our observations over the last two years have proved this disliked bird to be a useful ally.

On several occasions, we observed House Sparrows eating substantial amounts of grasshoppers in August. I watched a sparrow catch a large grasshopper, too large for it to eat whole. The grasshopper was already dead when I noticed the sparrow lift it by the wing, then smash it down on a rock so that the wing broke off - then the other wing and each leg in turn. Then it took the body to feed to its young.

A publication by the Department of Agriculture in Washington, written in 1889 states that research has shown the adaptable House Sparrow can diversify its feeding habits to eat caterpillars, cankerworms (keeping them in check) and spiders, to name a few.[1]

In our experience, cats rarely take House Sparrows; they take far more native birds. In North America, the real predator of the House Sparrow is, in winter, the Northern Shrike.[1] Sharp-shinned Hawks and Kestrels will also take their share of the House Sparrow population when the opportunity presents itself and the Long-eared Owl will make a meal of the House Sparrow, determined by examining their pellets.[1] I have yet to find a House Sparrow beak in the pellet of a Great Horned Owl or Short-eared Owl. We have observed the Merlin and the Cooper's Hawk take House Sparrows right in our farm yard.

Having said this, the House Sparrow is part of where we live, like it or not. The question remains whether, as an introduced species, the House Sparrow has taken its place in the North American ecosystem. Maybe, just maybe, we could change our attitude towards the House Sparrow by observing this bird throughout the summer months. I suggest it can be an ally, if only partially, by keeping some balance in insect infestations and fluctuations.

[1] Barrows, WB. 1889. The English Sparrow in North America. U.S. Dept. of Agriculture Bull. 1. Washington, D.C.

Marten Stoffel, RR#4, Box 183, Saskatoon, SK S7K 3J7

GOSHAWK NABS REDPOLL

We live in downtown Saskatoon, a block and a half north of Saskatoon City Hospital. Fifteen minutes after noon on Saturday, 15 January 2000, my stepdaughter and I were in the sunroom. I noticed a Common Redpoll on our feeder, then as I turned my head away a large shadow flashed by the window and my stepdaughter gasped. "That bird just took the redpoll from the feeder!"

Sure enough, there was a large hawk perched in the pine tree, tearing at the redpoll. Out came the Peterson Western Field Guide. Between us, we made a tentative identification of an immature male Northern Goshawk. When he had finished his lunch, the goshawk moved to an overhanging branch in our neighbour's yard. We phoned Stuart Houston, who came over to confirm our identification of this unusual species for a city backyard.

After about an hour and a half, the goshawk dropped from the branch like a stone, soared over the back fence and was gone.

Sue Brooks, 717 7th Avenue North, Saskatoon SK S7K 2V3

WOOD DUCK NEST ON THE GROUND SOUTHWEST OF KYLE

My first sighting of a Wood Duck was a male that appeared briefly at my pond near Kyle, 16 May1993. My next sighting was in May 1999, when a pair of Wood Ducks elected to lay their eggs beneath a triangular wooden structure I had placed on the ground on an island in the pond ten years earlier to shelter the nest of domestic ducks. This structure also had been used once, about 1995, by a wild female Mallard as a nest shelter. We checked the Wood Duck nest 6 June 1999, and found nine Wood Duck eggs, cold and abandoned, with no adult in sight. Two eggs had been opened at one end; I suspect the predator was the resident muskrat.

This is the first Wood Duck nest record for the "Elbow district" of south-central Saskatchewan. It may be only the second report of a Wood Duck nesting on the ground. Mason and Dust reported that a Wood Duck laid seven eggs on a hummock 10 m from the shoreline of a pond on the Auburn University campus in Alabama.[2] This is the only record of a nest on the ground Gary R. Hepp (pers. comm.) encountered in researching the Wood Duck literature.[1] The Wood Ducks on my pond built their nest on the ground but under an artificial shelter.

Acknowledgements:

Thanks to Stuart Houston for his help in preparing this note.

1. Hepp, Gary R. and F. C. Bellrose. 1995. Wood Duck (*Aix sponsa*) In: Poole, A. and F. Gill (eds.). The Birds of North America, No. 169. The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D. C.

2. Mason P. J., and J. L. Dusi. 1983. A ground nesting Wood Duck. *Auk* 100:506.

Sig Jordheim, Box 544, Kyle SK S0L 1T0

Fringed Gentian Shirley Johnston

GUIDELINES FOR AUTHORS

Blue Jay is the quarterly journal of Nature Saskatchewan and publishes articles on natural history of the prairie provinces and adjacent regions. Articles, Notes and Letters on any observation of interest in the field of natural history are encouraged. All submissions are reviewed by the editors and at least one other person competent in the subject area. All members of Nature Saskatchewan are encouraged to write for *Blue Jay*, and submissions from non-members are equally welcome.

Manuscripts prepared on a typewriter, by hand, or a computer are acceptable. However, because all documents must be put into electronic form before being sent to the printer, computer users can facilitate processing manuscripts by sending their submission as an electronic file (on a computer diskette or by E-mail).

These guidelines are intended to ease the task of editing as well as to help writers in the preparation of manuscripts. Although written in a terse style for brevity they are not meant to be dictatorial. Manuscripts that do not follow these guidelines will still be considered for publication; necessary modifications can be made by the author on acceptance of the manuscript.

PLEASE NOTE that these guidelines have been revised by the current editors and differ from the previous guidelines in a number of small details. It would help the editors if all authors, new and experienced, read them from beginning to end, paying special attention to the sections on tables and figures (2.6 & 2.7), references (2.8) and how to submit photographs (4.1). Sections 1.2 and 5 for computer users are completely new.

1 - Preparation of Manuscripts

1.1 - Writing Style: The writing style should be suitable for the general public. This does not mean that content must be limited to simple subjects, but that the writing should be clear and devoid of jargon and unnecessary technical terms. Scientific articles also should be written in a popular style.

1.2 - Word Processors and Computers: Use a 12-point font, preferably Times New Roman. Use one-inch margins and left justification, and double-space the entire manuscript. Limit formatting commands to tab, bold, italics, underline and upper and lower case. Do not use advanced formatting features of word processing programs, such as hanging indents, customized tab settings, columns, etc, as these can create havoc in different word processing systems.

1.3 - Typewritten and Handwritten submissions: Double space the entire manuscript. Double underline words that are to appear in italics.

1.4 - Scientific Names : Scientific names are not needed for North American species for which standardized common names are available : birds, mammals and butterflies. For other groups, both the common and scientific name should be used the first time the species is mentioned and in the following format: Common Name (*Genus species*). Thereafter, only the common name is used. Note that standardized common names of species are capitalized but group names and names that are not standardized are in lower case (e.g. 12 robins; 12 American Robins). If no

common name is appropriate, the scientific name, in italics, is used throughout the manuscript (e.g. *Tyrannosaurus rex* or *Tyrannosaurus*).

Choosing the appropriate common name can be problematic in many instances; the associate editors and editors will try to supply official common names as needed. The following references are used by *Blue Jay* as sources of standardized common names.

American Ornithologist's Union. 1998. Checklist of North American Birds. 7th Edition. American Ornithologists Union, Washington, D. C.

Banfield, A.W. F. 1974. The Mammals of Canada. National Museum of Natural Sciences, University of Toronto Press, Toronto.

Layberry, R. A., P. W. Hall and J. D. Fontaine. 1998. The Butterflies of Canada. University of Toronto Press, Toronto.

1.5 - Names of People: In general, people should be referred to by first and last names (initials may replace the first names) and without titles such as Mr., Ms., Dr., etc. Rarely, it may be appropriate to use official titles (Her Majesty Queen Elizabeth II versus Betty Windsor)

1.6 - Numbers: Numbers from one to nine (inclusive) are written as words; however, numerals (digits) are always used with standard units of measure, including dates, times, page numbers, percentages, etc. (e.g. 2 km, 7%). Numerals are used for all numbers 10 or larger. When a number less than 10 occurs in a sequence with numbers of 10 or greater, then the smaller number also should be a numeral (e.g. 5 to 25 catbirds). Never begin a sentence with a numeral; reword the sentence, write out the number, or end the preceding sentence with a semi-colon. Use words to shorten very large numbers (e.g. 1.6 million).

1.7 - Time: Time can be expressed using either the 12- or 24-hour clock. When using the 24-hour clock, the time is given as four digits, two each for hours and minutes, not separated and followed by the abbreviation h for hours, (e.g. 2113h). The 12-hour clock requires the use of a colon between the hours and minutes and the designation AM or PM (e.g. 9:13 AM).

1.8 - Distance: Measures of distance may be given in either the English or metric systems, however use only one system within a manuscript. Mile is abbreviated mi. but there is no period following the abbreviated symbols in the metric system – kilometre is designated as km, metre – m, centimetre – cm, etc.

1.9 - Direction: Directions are indicated by abbreviations: n, s, e, w, ne, nw, se, sw, etc., all lower case and without periods.

If there is uncertainty about aspects of format and style, consult a recent issue of *Blue Jay* for similar types of articles, or contact the editors. The standard style reference for *Blue Jay* is: Scientific Style and Format: The CBE Manual for Authors, Editors and Publishers. Sixth Ed. 1994. Council of Biology Editors Inc. and Cambridge University Press, Cambridge, UK (ISBN 0-521-47154-0). This should be available in major libraries.

2 - Format

2.1 - Titles: Titles of articles are in UPPER CASE and begin at the left hand margin at the top of the first page.

2.2 - Author's Name: These are in UPPER CASE and begin at the left hand margin.

2.3 - Author's Address: The complete postal address of each author is given in upper and lower case with no abbreviations except for the standard two-letter abbreviations for provinces and states. The postal code follows the province. E-mail address (optional) follows the postal code.

The format for Notes, Letters and Book Reviews differs slightly in these details. The author's name is in italics and is placed with the address at the end of the text. In addition, the title of a book review is the title of the book being reviewed. It is followed by a complete citation for the book, including the current Canadian retail price in hard and/ or soft cover, and the ISBN number.

2.4 - Paragraphs: Double-space between paragraphs, without indentation of the first word.

2.5 - Sub-headings: Sub-headings and other subdivisions of the text should be used only when necessary and should be kept to a minimum. The standard format for a sub-heading is upper and lower case in bold-face type (e.g. **Standard Sub-heading**).

2.6 - Tables: Tables are numbered consecutively in the order in which they are cited in the text and are cited by number (e.g. Table 2). The table title should be in upper and lower case (e.g. Table 1: Bird Numbers). Tables should not be submitted as part of the text; each table should be on a separate page. Prepare simple tables using tab, space bar and a minimum of horizontal lines. Complicated or graphically-complex tables may be submitted in "camera-ready" form, suitable for printing.

2.7 - Figures : Figures include all photographs, graphs, maps and drawings. They are numbered consecutively in the order in which they appear in the text and are cited by number (e.g. Fig.1). Each figure should be submitted on a separate page. Legends and captions are put on their own page separate from the figures.

2.8 - References: References are listed in alphabetical order by the author's last name – not in the sequence that they appear in the text – and are then numbered. They are cited in the text as a superscript number placed at the end of the sentence to which they refer and after the period that ends the sentence (e.g.... were described previously.[2]). When more than one reference is cited, superscript numbers are separated by commas. (e.g. [1, 2, 5]).

The list of references follows the last paragraph of the text or the acknowledgements section, if there is one. No subheading such as "References" or "Literature Cited" is needed. Titles of articles and book chapters are in lower case, with upper case used only for the first letter of the first word in the title and in all proper nouns. Titles of books, journals and magazines are in upper and lower case, and, in addition, titles of journals and magazines are italicized. Names of journals and magazines should be written out in full rather than abbreviated.

Examples of the format used for the most common types of references are given below.

Books :

1. Kaufman, K. 1996. Lives of North American Birds. Houghton Mifflin, Boston.

Journal or Magazine Articles:

1. Kidd, T.E., P. T. Barnum and R.

Virchow. 1886. Additional observations of the Barred Owl in Alberta. *Blue Jay* 44:41- 43.

Book Chapter:
1. Heiser, C. B. 1995. The ethnobotany of domesticated plants. In: Shultes, R. E. and S. von Reis (eds.). Ethnobotany, Evolution of a Discipline. Dioscorides Press, Portland, Oregon. p. 200-203.

It is the responsibility of the authors to ensure that the citations in the list of references are accurate and complete in all details. Inaccurate citations are a disservice to readers so PLEASE make sure that each citation is sufficiently complete that readers can find it in an appropriate library or book outlet.

3 - Photographs and Artwork
Photographs, drawings and other artwork related to the natural history of the prairie provinces and the adjacent regions are always welcome, whether or not associated with an article. *Blue Jay* maintains a file of such illustrations and uses them whenever there is an opportunity to do so, which is often. The name of the photographer or artist should be included along with a caption. See guidelines below for submission of photographs and artwork. Photographs and artwork submitted will become part of the *Blue Jay*'s permanent collection.

4 - How to make submissions to *Blue Jay*
Accompany each submission with a short cover letter or E-mail message giving a name, postal address, telephone number and E-mail address of the person to be contacted about the article.

If manuscripts are hand-written or prepared on a typewriter, the original and one copy should be submitted. If the manuscript is prepared on a computer or word processor, submit two copies AND an electronic file on diskette or send by E-mail (see instructions for electronic submissions below). Submissions should be mailed directly to the editors. Authors should themselves retain one complete copy of the manuscript. Photographs and other illustrations do not need to be submitted in duplicate.

4.1 - Photographs: Prints are preferred to slides, but slides are acceptable. If slides are submitted, send originals, not duplicates. Make duplicate copies of all slides submitted in case the original gets lost in the mail. Nature Saskatchewan will make every effort to return slides but cannot guarantee their safe passage through the mail system. Label all photographs on the back with the photographer's name and, if the photograph accompanies an article, the figure number. Captions can be put on the back of the photograph or on a separate page.

4.2 - Drawings and other Artwork: These should be submitted following all the above guidelines for photographs. Valuable artwork should not be submitted in the original. Instead, a high-quality photocopy or photograph should be submitted.

5 - Electronic submissions
Manuscripts submitted in electronic form may be in any one of four different word processor formats: WordPerfect, Microsoft Word, Rich Text Format (rtf), or ASCII Text. They can be submitted to the editors in one of two ways : by E-mail or on diskette.

E-mail. The manuscript should be sent as an attached file in one of the four word processor formats listed above. Do not use HTML format when sending manuscripts by E-mail. The editors' E-mail address is <leighton@sk.sympatico.ca>. When E-mail is used, there is no need

to send duplicate hard copies of the manuscript. Illustrations and figures should be mailed to the editors and clearly identified by title and author(s) as belonging to the manuscript. If there is any question about how to send a document by E-mail, contact the editors for advice.

Diskette: Diskettes should be sent by regular mail along with the two printed copies of manuscripts prepared on a computer or word processor. Use a 3.5" diskette in IBM-compatible format. MacIntosh computer users should ensure that the diskette sent to the editors is in IBM-compatible and not in MacIntosh, format. Problems with diskette format incompatibility can be overcome by sending the manuscript by Email.

6 - Submission Deadlines

Blue Jay is published in March, June September and December. Submission deadlines are two months prior to publication : 1 January (for the March issue), 1 April (for June), 1 July (for September) and 1 October (for December).

Further Information : contact the editors (Anna and Ted Leighton) at 328 Saskatchewan Crescent West, Saskatoon, SK S7M 0A4; E-mail: <leighton@sk.sympatico.ca>; Telephone: (306) 665-6074.



Young American Bittern ***B. W. Johns***

MYSTERY PHOTO



This photo, taken 22 May 1999, shows a cluster of jelly-like fingers growing on a branch of Creeping Juniper (*Juniperus horizontalis*). Do you know whose fleshy appendages these are? You may send your response to the editors of Blue Jay. The ANSWER will appear in the next issue.



"Most bees are unable to hover in midair while they drink nectar, so most bee-pollinated flowers are equipped with petals or sepals modified to form rigid landing platforms complete with runways well marked with nectar guides. That's why the flowers of so many orchids, snapdragons, mints, irises, jewelweeds (*Impatiens*), and peas have stiff lower lips, aprons, or keels."

Peter Bernhardt, *The Rose's Kiss,* p. 167

Answer for DECEMBER 1999 MYSTERY PHOTO



The December mystery photo shows an enclosure built by a female spider to protect her egg sac. The female folds a grass leaf in two places, and then seals the edges completely from the inside, leaving no sign of who made it or where the entrance is. She stays inside this folded-grass fortress with her "magnum opus" (as E.B. White's Charlotte calls it) until the eggs hatch. This species of spider, *Clubiona riparia*, lives in tall grass and occurs throughout eastern and central North America.

Correct responses were received from David Peters in Saginaw, Michigan and Jim Wolford in Wolfville, N.S. David Peters mentioned that these egg cases are particularly common on Reed Canary-grass (*Phalaris arundinacea*) along open roadsides adjacent to bottomland forests in Shiawassee National Wildlife Refuge, where he works.

In Nova Scotia, these occur in tall grass in marshy areas according to Jim Wolford. Jim provided us with two references that include information on these spiders : The Country Life Guide to Spiders of Britain and Europe, 1983 by Dick Jones (which has a photo of a similar egg sac made by a European species) and How to Know the Spiders, 3rd Edition, 1978 by B. J. Kaston.

The editors would like to thank Don Buckle for providing the information on this mystery structure.

"In ancient Greece, human souls were thought to become butterflies while searching for a new reincarnation. Carvings on sarcophagi show a butterfly soul flying over a corpse, skeleton, or skull, and the ancient Greeks placed gold butterflies in the tombs of loved ones to symbolize their reawakening to a new life. Psyche was the Greek word for both soul and butterfly and in art was often represented as a maiden with butterfly wings, or simply as a butterfly."

Joanne E. Lauck, *The Voice of the Infinite in The Small*, p. 264.



Damselfly ***Juhachi Asai***

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